

Appropriate Liability Rules for Tying and Bundled Discounting

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Professor Einer Elhauge's provocative article, Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory, 123 Harv. L. Rev. 397 (2009), contests two propositions on which efficiency-minded antitrust scholars have largely agreed: (1) that there should be no tying liability absent substantial tied market foreclosure (a position contrary to the legal status quo), and (2) that courts should recognize a safe harbor for any bundled discount that results in above-cost pricing that could be matched by an equally efficient, single-product rival. Elhauge maintains that tie-ins that do not cause substantial tied market foreclosure may nonetheless occasion adverse "power" effects that the U.S. Supreme Court has properly deemed to be anticompetitive. Those power effects may also result, Elhauge argues, from bundled discounts (even "above-cost" bundled discounts) that involve artificial inflation of the unbundled "linking" product price. These conclusions lead Elhauge to defend prevailing tying doctrine and to advocate a bundled discount rule that eschews price-cost comparisons and instead focuses on whether the discounter has raised the unbundled price of its linking product above but-for levels.

This Article asserts a comprehensive response to Elhauge's arguments. With respect to tying, the Article shows that governing Supreme Court precedent does not deem the nonforeclosure "power" effects of the practice to be anticompetitive and that those effects are unlikely to reduce social welfare in the long run, especially after accounting for dynamic efficiencies. With respect to bundled discounting, the Article shows that Elhauge's proposed liability rule is both inapposite to consumer harm and inadministrable and that both "linked" market foreclosure and a form of below-cost pricing are necessary for anticompetitive harm and should therefore be prerequisites to antitrust liability.

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I. INTRODUCTION

Tying—a monopolist’s sale of its monopoly “tying” product on the condition that the buyer also purchase some other “tied” product¹—has long been subject to antitrust scrutiny² and has generated a tremendous volume of scholarly commentary.³ Bundled discounting—a seller’s charging less for a package of disparate products than the aggregate price it would charge for the products if purchased separately⁴—has a shorter history of antitrust scrutiny but has recently attracted a substantial amount of attention from regulators and scholars.⁵ While antitrust commentators are far from consensus on the proper

¹ See *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 5–6 (1958) (“[A] tying arrangement may be defined as an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier.”).

² See *id.* at 1; *Int’l Salt Co. v. United States*, 332 U.S. 392 (1947); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

³ The scholarly literature on tying is far too voluminous to cite exhaustively. For a detailed overview of the issues addressed in the scholarship, see 9 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* (2d ed. 2004); 10 PHILLIP E. AREEDA, HERBERT HOVENKAMP & EINER ELHAUGE, *ANTITRUST LAW* (2d ed. 2004). Volumes IX and X of the seminal Areeda treatise are devoted to consideration of tying arrangements and related practices.

⁴ See Thomas A. Lambert, *Evaluating Bundled Discounts*, 89 MINN. L. REV. 1688, 1689 (2005) (defining bundled discounting).

⁵ See, e.g., ANTITRUST MODERNIZATION COMM., REPORT AND RECOMMENDATIONS 94–100 (2007) [hereinafter AMC REPORT]; U.S. DEP’T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 91–106 (2008) [hereinafter BUSH DOJ SINGLE-FIRM CONDUCT REPORT] (abrogated by Obama Justice Department, see Press Release, U.S. Dep’t of Justice, Justice Department Withdraws Report on Antitrust Monopoly Law (May 11, 2009)); Dennis W. Carlton et al., *Assessing the Anticompetitive Effects of Multiproduct Pricing*, 53 ANTITRUST BULL. 587 (2008); Daniel A. Crane, *Mixed Bundling, Profit Sacrifice, and Consumer Welfare*, 55 EMORY L.J. 423 (2006); David S. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 YALE J. ON REG. 37 (2005); Herbert Hovenkamp, *Discounts and Exclusion*, 2006 UTAH L. REV. 841; Bruce H. Kobayashi, *Does Economics Provide a Reliable Guide to Regulating Commodity Bundling by Firms? A Survey of the Economic Literature*, 1 J. COMPETITION L. & ECON. 707 (2005); Lambert, *supra* note 4; Timothy J. Muris & Vernon L. Smith, *Antitrust and Bundled Discounts: An Experimental Analysis*, 75 ANTITRUST L.J. 399 (2008); Barry Nalebuff, *Exclusionary Bundling*, 50 ANTITRUST BULL. 321 (2005).

legal treatment of either practice, efficiency-minded scholars have largely agreed upon a couple of general principles in recent years. With respect to tying, scholars from both the relatively laissez-faire Chicago School and the more interventionist Harvard School⁶ have endorsed the view, contrary to the legal status quo, that liability should result only if the tie-in arrangement results in significant foreclosure of marketing opportunities in the tied product market.⁷ On bundled discounting, most efficiency-minded commentators appear to have concluded that there should be a safe harbor for bundled discounts that are not too deep—that are in some sense (and the commentators have not agreed on the precise sense) “above-cost.”⁸

In his recent, widely noted article *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*,⁹ Professor Einer Elhauge challenges each of these broadly agreed-upon principles. With respect to tying, Elhauge largely defends the legal status quo under which antitrust liability results, regardless of the degree of tied market foreclosure occasioned by the tie-in, as long as the seller has monopoly power in the tying product market and the tie-in affects a substantial dollar volume (*not* percentage of marketing opportunities) in the tied product market.¹⁰ This approach generally makes sense, he argues, because even instances of tying that fail to cause substantial tied market foreclosure may

⁶For a description of the Chicago and Harvard (and post-Chicago) Schools, see HERBERT HOVENKAMP, *THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION* 31–39 (2005).

⁷*See, e.g.*, 9 AREEDA & HOVENKAMP, *supra* note 3, ¶ 1701, at 26; *id.* ¶ 1703d3, at 38; RICHARD A. POSNER, *ANTITRUST LAW* 198 (2d ed. 2001) (“A striking deficiency of the traditional ‘leverage’ theory of tie-ins . . . [is] its failure to require any proof that a monopoly of the tied product [is] even a remotely plausible consequence of the tie-in.”); HOVENKAMP, *supra* note 6, at 201–06; BUSH DOJ SINGLE-FIRM CONDUCT REPORT, *supra* note 5, at 89–90 (2008) (collecting sources).

⁸*See, e.g.*, AMC REPORT, *supra* note 5, at 12, 83, 99–100; BUSH DOJ SINGLE-FIRM CONDUCT REPORT, *supra* note 5, at 101–02; Crane, *supra* note 5, at 474–75; Hovenkamp, *supra* note 5, at 852–54; Lambert, *supra* note 4, at 1691 n.15; Muris & Smith, *supra* note 5, at 425; Nalebuff, *supra* note 5, at 328–43.

⁹Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397 (2009). Based on his article, the American Antitrust Institute awarded Elhauge the Jerry S. Cohen Award for best antitrust scholarship in 2009. *See* Press Release, Harvard Law Sch. Office of Commc’ns, Elhauge Receives Jerry S. Cohen Award for Best Antitrust Scholarship of 2009 (May 6, 2010), *available at* http://www.law.harvard.edu/news/2010/05/06_elhague.html. Even before it was published, antitrust scholars recognized the significance of Elhauge’s article. In its Autumn 2009 issue, the antitrust journal *Competition Policy International* hosted a symposium on the piece. *See A Symposium on Antitrust and the Global Economic Crisis*, COMPETITION POL’Y INT’L, Autumn 2009, at 3.

¹⁰Elhauge, *supra* note 9, at 425 (“[T]ying doctrine correctly requires proof of the elements necessary to achieve anticompetitive effects.”). For the elements of liability under prevailing tying doctrine, see *infra* notes 83–84 and accompanying text.

create nonforeclosure “power” effects that the Supreme Court has properly deemed to be anticompetitive.¹¹

Elhauge’s proposed treatment of bundled discounts builds upon his tying analysis. For any bundled discount in which the unbundled price of the monopoly (or, as he terms it, the “linking”) product exceeds the unbundled price that would have prevailed absent the discounting scheme (the “but-for” price), Elhauge would simply treat the discount as a *de facto* tie-in and invoke his proposed tying analysis.¹² For a bundled discount in which the unbundled price of the linking product does not exceed the but-for price, liability would turn on the degree to which the discount forecloses marketing opportunities in the market for the nonmonopoly, or “linked,” product.¹³ Notably, Elhauge would recognize no safe harbor for bundled discounts that result in an above-cost price for the bundled products, even if the nonmonopoly linked product is priced above cost after the entire amount of the bundled discount is attributed to that product.¹⁴ Elhauge’s recommended approach is thus substantially more prohibitory than either the approach recommended by the Antitrust Modernization Commission¹⁵ or that set forth in the U.S. Department of Justice’s now-abrogated Section 2 Report.¹⁶

This Article critiques Elhauge’s proposed treatment of tying and bundled discounts. With respect to tying, Elhauge makes both descriptive and normative mistakes. As a descriptive matter, he incorrectly asserts that current legal doctrine treats the so-called power (i.e., nonforeclosure) effects of tying, which Chicago School antitrust scholars have long acknowledged,¹⁷ as the sort of anticompetitive harm that is properly policed by the antitrust laws.¹⁸ As a normative matter, he errs in concluding that antitrust *should* police such effects.¹⁹ The better view is that antitrust should reach only the extension—not the mere exercise—of market power (or, as others have put it, should permit

¹¹ See Elhauge, *supra* note 9, at 404–13 (discussing nonforeclosure “power” effects of tying); *id.* at 420–26 (arguing that Supreme Court precedent deems nonforeclosure power effects to be anticompetitive); *id.* at 426–42 (arguing that power effects *should* be deemed anticompetitive); *id.* at 425 (“Given [the Supreme Court’s] conclusion that the power effects are anticompetitive, the focus on tying market power and tied dollar amount does not mean that the doctrine fails to require evidence of anticompetitive effects.”). Elhauge does advocate reining in tying liability a bit from the status quo: he would require a showing of substantial tied market foreclosure for tie-ins where (1) the tying and tied products are sold or used in fixed proportions, and (2) the tied product is useless without the tying product. *Id.* at 442–43.

¹² *Id.* at 468.

¹³ *Id.* at 469.

¹⁴ *Id.* at 461–67 (rejecting all “cost-based” liability tests and safe harbors for bundled discounts).

¹⁵ AMC REPORT, *supra* note 5, at 12, 83, 99–100.

¹⁶ BUSH DOJ SINGLE-FIRM CONDUCT REPORT, *supra* note 5, at 101–02.

¹⁷ See *infra* note 78 and accompanying text.

¹⁸ See *infra* Part III.A (criticizing Elhauge, *supra* note 9, at 420–26).

¹⁹ See *infra* Part III.B (criticizing Elhauge, *supra* note 9, at 426–42).

monopoly “extraction” while policing monopoly “extension”).²⁰ Such a view would impose tying liability only when a tie-in creates foreclosure effects.

Of course, if tying’s nonforeclosure effects are an insufficient basis for liability, then much of Elhauge’s proposal regarding bundled discounts must falter. In particular, the mere fact that a seller’s unbundled price for its linking product exceeds the (immensely difficult-to-determine) but-for price should not be enough either to create liability or to place the burden on the seller to prove that the bundled discount creates efficiencies in excess of the discount amount. Rather, bundled discounts should be condemned only if they result in substantial foreclosure of the linked product market.²¹ Moreover, because not all foreclosure of rivals is anticompetitive (for example, a product improvement that wins business from competitors tends to “foreclose” those rivals but is in no sense anticompetitive), antitrust tribunals need some means of separating permissible foreclosure-causing bundled discounts from illicit ones. Some sort of price-cost test is therefore essential for separating the procompetitive wheat from the anticompetitive chaff.²²

The remainder of this Article proceeds as follows. Part II sets forth the theoretical foundation for Elhauge’s legal conclusions, briefly summarizing the arguments that lead to, in his words, “the death of the single monopoly profit theory.”²³ Part III contests Elhauge’s proposed tying analysis and explains why tied market foreclosure should be a prerequisite to tying liability. Part IV addresses Elhauge’s proposal for evaluating bundled discounts, demonstrating that his proposed approach asks the wrong question and is both inadministrable and inapposite to anticompetitive harm. Part IV also explains why a proper treatment of bundled discounts should focus on anticompetitive foreclosure, which will inevitably entail the sort of price-cost comparison Elhauge eschews. Part V concludes.

II. THE THEORY UNDERLYING THE PURPORTED “DEATH OF THE SINGLE MONOPOLY PROFIT THEORY”

The foundation for Elhauge’s proposed legal treatment of tying and bundled discounts is his criticism of the Chicago School’s so-called “single monopoly profit theory.” Responding to the strict per se rule against tying, a rule that arose from courts’ concern that a monopolist could use a tie-in to leverage its monopoly over the tying product to obtain monopoly profits on a second product,²⁴ Chicago School theorists maintained that such leveraging is generally

²⁰ See Dennis W. Carlton & Ken Heyer, *Appropriate Antitrust Policy Towards Single-Firm Conduct* (Econ. Analysis Grp. Discussion Paper No. 08-2, 2008), available at <http://ssrn.com/abstract=1111665>.

²¹ See *infra* Part IV.B.1–3.

²² See *infra* Part IV.B.4–4a.

²³ Elhauge, *supra* note 9, at 403–19.

²⁴ See, e.g., *Carbice Corp. of Am. v. Am. Patents Dev. Corp.*, 283 U.S. 27, 32 (1931) (“The owner of a patent for a machine might thereby [i.e., via tying of supplies for the

impossible and that a monopolist can attain all available monopoly profits simply by raising its price for the tying product to monopoly levels.²⁵ These scholars reasoned that when a consumer decides whether to buy a product, she tallies the various costs she must incur to obtain that product and determines whether those costs, taken together, exceed the subjective value she expects to receive from the product (her reservation price). When a monopolist ties another product to the sale of its monopoly product, it effectively raises the price of its monopoly product, especially if it attempts to charge a supracompetitive price for the tied product. If such tying pushes the effective price for the monopoly product above the profit-maximizing monopoly price, the seller's profits will fall. But there is no need to tie in order to raise the effective price to the profit-maximizing, single-product level; the seller could simply charge that price for the tying product alone. Thus, a tie-in does not provide the seller with any additional monopoly profit opportunity. One single monopoly profit is available, and it can be fully exploited simply by charging the profit-maximizing price for the monopoly product.²⁶

machine] secure a partial monopoly on the unpatented supplies consumed in its operation.”). See generally E. THOMAS SULLIVAN, HERBERT HOVENKAMP & HOWARD A. SHELANSKI, *ANTITRUST LAW, POLICY AND PROCEDURE: CASES, MATERIALS, PROBLEMS* 480 (6th ed. 2009) (observing that the leverage theory, which supposed that a tying monopolist “us[ed] its power or dominance in the tying product as a ‘lever’” to achieve market power in the tied market, “found acceptance in many Supreme Court opinions, beginning as early as 1917, and many of these classified ties as illegal *per se*”).

²⁵ See Ward Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19, 20 (1957) (“If the tying seller is maximizing his return on the tying product and the same output of the tied product can still be produced . . . no additional or new monopoly effect should be assumed.”); see also ROBERT A. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 372–75, 380–81 (1978); POSNER, *supra* note 7, at 197–99; RICHARD A. POSNER & FRANK H. EASTERBROOK, *ANTITRUST: CASES, ECONOMIC NOTES AND OTHER MATERIALS* 802–03 (2d ed. 1981); Aaron Director & Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281, 290–92 (1956); Benjamin Klein, *Tying*, in 3 *THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW* 630–31 (Peter Newman ed., 1998); Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 926 (1979).

²⁶ A leading antitrust casebook offers the following example to illustrate the single monopoly profit argument:

Assume, for example, that a firm has a monopoly in the bolt market but that the nut market is competitive. Most customers use a nut with a bolt and buy them in equal numbers. With respect to these customers the profit-maximizing price of the “package”—a nut and a bolt—is, say, 50 cents. If nuts are being sold at a competitive price of 10 cents, the monopolist in bolts will maximize his profits by selling bolts for 40 cents. But now suppose that the bolt monopolist uses a tying arrangement: he forces all purchasers of one of his bolts to take a nut from him as well. What price will he be able to charge for the nut? The answer is 10 cents, the competitive price. By charging the profit-maximizing price for the bolt, the bolt monopolist has already extracted all available monopoly profits from the bolt-nut package. If he attempts to use a tying

This single monopoly profit theory, Elhauge maintains, depends on several key assumptions that, he says, are rarely satisfied. Those assumptions are that: (1) the tying and tied products are used in fixed proportions, (2) there is a strong positive demand correlation between the tying and tied products, (3) buyers purchase a fixed number of units of the tying product, (4) the competitiveness of the tied product market is fixed, and (5) the competitiveness of the tying product market is fixed.²⁷ Relaxing any of those five assumptions, Elhauge says, creates conditions under which tying could harm consumers and would be anticompetitive.²⁸ Thus, he contends, the single monopoly profit theory is naïve and incomplete, and the legal conclusion it implies—that tying should be presumptively legal (or, at a minimum, not per se illegal)—is incorrect.

By relaxing each of the assumptions of the single monopoly profit theory, Elhauge claims to demonstrate five potential anticompetitive effects of tying. He divides the effects into two groups depending on whether they require significant tied market foreclosure.²⁹

A. *The Power (i.e., Price Discrimination) Effects*

Three of the purportedly harmful effects do not require substantial foreclosure of marketing opportunities in the tied product market. Elhauge refers to such nonforeclosure effects as “power” effects because, he says, they require merely that the seller possess market power in the tying product market.³⁰ They might better be termed price-discrimination effects, for they all involve seller attempts to extract additional surplus via price discrimination, and

arrangement to force customers to take their nuts from him at a price of, say, 15 cents, he will produce less, not more, monopoly profits.

SULLIVAN ET AL., *supra* note 24, at 481.

²⁷ Elhauge, *supra* note 9, at 404. Elhauge fails to mention another of the single monopoly profit theory’s assumptions: that the tying product is not used in conjunction with a complementary product or service that is itself sold in a non-competitive market. When the tying product is used with such a complement (which, due to the lack of competition, is sold at a supracompetitive price), the producer may enhance its profits by producing the complement at issue and tying it in at a competitive (or less supracompetitive) price. *See infra* notes 161–62 and accompanying text. *See generally* Erik Hovenkamp & Herbert Hovenkamp, *Tying Arrangements and Antitrust Harm*, 52 ARIZ. L. REV. 925, 958–61 (2010) (discussing double marginalization and the possible “reverse leveraging” effect of tie-ins). Tying to eliminate such “double marginalization,” while profit-enhancing for the seller, also tends to benefit consumers. *Id.*

²⁸ *See* Elhauge, *supra* note 9, at 404.

²⁹ *See id.* at 400 (distinguishing “foreclosure share effects,” which “require foreclosing a substantial share of the tied market,” from “power effects,” which “require only some existing tying market power”).

³⁰ *See id.*

they do not require *antitrust* market power (only economic market power, which is not the same thing).³¹

1. Price Discrimination Across Buyers of the Tying Product

The first theory of consumer harm results from relaxing the assumption that the tying and tied products are sold or used in fixed ratios (i.e., one tied product per tying product). If the consumption of the tied product is variable, so that some purchasers of a single tying product use more of the tied product than do others, and if demand for the tied product is positively correlated with demand for the tying product, then a tie-in can be used to price discriminate against consumers who attach a relatively high value to the tying product.³² For example, a printer monopolist, reasonably assuming that high-volume users will attach a higher value to the printer than will low-volume users, may seek to charge those heavy users a higher effective price by lowering its printer price from monopoly levels but then requiring that printer buyers also purchase its ink cartridges at a supracompetitive (above-cost) price.³³

Such a strategy would allow the seller to enhance its profits by charging heavy (higher valuing) users effective prices that are above the monopoly price while expanding sales to lighter (lower valuing) users at effective prices that are below the monopoly level but are still above-cost and hence economically profitable for the seller.³⁴ Because this sort of tie-in uses demand for the tied product to measure expected demand for the tying product, such ties are typically called “metering” ties.³⁵ Metering ties may be more effective or less costly than direct price discrimination (i.e., just charging different printer prices to different consumers) because (1) the seller need not segregate the consumers, whose reservation prices it does not know, into high-price and low-price groups; (2) there would be no danger of arbitrage (e.g., low-price buyers’ stockpiling printers and reselling them to high-price buyers at some price less than that charged by the printer seller); and (3) the seller could avoid liability for price discrimination under the Robinson-Patman Act.³⁶

³¹ See Benjamin Klein & John Shepard Wiley, Jr., *Competitive Price Discrimination as an Antitrust Justification for Intellectual Property Refusals to Deal*, 70 ANTITRUST L.J. 599, 603–07, 611–19, 624–33 (2003) (explaining that the so-called power effects are simply instances of generally procompetitive price discrimination and distinguishing economic market power from antitrust market power).

³² Elhauge, *supra* note 9, at 404–05. While it is not strictly necessary that the tying and tied products be complements (as long as demand for the products is positively correlated), the vast majority of tie-ins imposed to accomplish this sort of price discrimination involve complementary products.

³³ *Id.*

³⁴ *Id.*

³⁵ See SULLIVAN ET AL., *supra* note 24, at 482.

³⁶ See *id.* at 482–83.

Elhauge contends that metering ties, which were first explained by early Chicago School scholars Aaron Director³⁷ and Ward Bowman³⁸ and continue to be acknowledged by scholars aligned with the Chicago School,³⁹ are anticompetitive because they result in a form of imperfect price discrimination that reduces both consumer and total welfare.⁴⁰ He is wrong. As Part III.B explains, Elhauge's mistaken assumption that metering ties amount to highly unrefined, "third-degree" price discrimination and his failure to account for dynamic efficiencies lead to an incorrect conclusion concerning the welfare effects of metering tie-ins.⁴¹

2. Price Discrimination Across Buyers of Both Products

The second power effect Elhauge documents results from relaxing the assumption that demand for the tying and tied products is positively correlated.⁴² A firm that sells multiple products for which demand is not positively correlated and that possesses market power over each (so that it may price each above its marginal cost) will, if it sells its products separately, find its pricing for each product constrained by the willingness to pay for highly price-sensitive purchasers (i.e., those exhibiting a high elasticity of demand).⁴³ By bundling the products for which demand is not positively correlated, the seller may evade this pricing constraint.⁴⁴

Elhauge offers a complicated example to illustrate this point,⁴⁵ but the basic insight is apparent from the following simple example offered by Nobel laureate George Stigler, the Chicago School scholar who first documented this use of

³⁷ Judge Posner credits Aaron Director, whom Posner has dubbed "the doyen of Chicago antitrust thinking," Richard A. Posner, *Vertical Restraints and Antitrust Policy*, 72 U. CHI. L. REV. 229, 229 (2005), with originally developing the theory of metering via tie-ins. See POSNER, *supra* note 7, at 200 n.15. Ward Bowman also gave Director such credit. See Bowman, *supra* note 25, at 19 (crediting Director with first explaining "tying as a counting device for price discrimination").

³⁸ See Bowman, *supra* note 25, at 23–24, 33.

³⁹ See, e.g., POSNER, *supra* note 7, at 200 n.15.

⁴⁰ Elhauge, *supra* note 9, at 430–34.

⁴¹ See *infra* Part III.B.1–a.ii, Part III.B.2. In general, I defer criticism of Elhauge's economic analysis to Part III.

⁴² See Elhauge, *supra* note 9, at 405–07, 419–20.

⁴³ See POSNER, *supra* note 7, at 235.

⁴⁴ See George Stigler, *United States v. Loew's Inc.: A Note on Block-Booking*, 1963 SUP. CT. REV. 152–53. While Stigler assumed that demand for the bundled products was negatively correlated, subsequent work has shown that the theory may apply when demand is positively correlated, but only weakly. See William James Adams & Janet L. Yellen, *Commodity Bundling and the Burden of Monopoly*, 90 Q.J. ECON. 475, 485 (1976); R. Preston McAfee et al., *Multiproduct Monopoly, Commodity Bundling, and Correlation of Values*, 104 Q.J. ECON. 371, 372–73, 377 (1989); Richard Schmalensee, *Gaussian Demand and Commodity Bundling*, 57 J. BUS. S211, S220 (1984).

⁴⁵ Elhauge, *supra* note 9, at 406.

tying.⁴⁶ Assume that a firm sells two unique products, *X* and *Y*, and that different customers value those products by different amounts. Suppose that the firm has two customers, *A* and *B*; that *A* values product *X* at \$8,000 and product *Y* at \$2,500; and that *B* values product *X* at \$7,000 and product *Y* at \$3,000. (For simplicity's sake, assume that the marginal cost of both products is zero.)

	<i>A</i> 's Reservation Price	<i>B</i> 's Reservation Price
Product <i>X</i>	\$8,000	\$7,000
Product <i>Y</i>	\$2,500	\$3,000

If the firm were to sell the products separately, it would charge \$7,000 for *X* and \$2,500 for *Y*, and it would earn profits of \$19,000 ($\$9,500 \times 2$). By tying the products together and selling them as a bundle, the seller can charge a total of \$10,000 per customer, an amount less than or equal to each customer's reservation price for the package, thereby earning profits of \$20,000. While each consumer is charged the same amount for the package, the pricing is in some sense discriminatory, for the seller effectively discriminates against *A*, the low-elasticity *X* buyer, on *A*'s purchase of *X* and against *B*, the low-elasticity *Y* buyer, on *B*'s purchase of *Y*.⁴⁷ In so doing, the seller may enhance its profits for, as Judge Posner explains, "When the products are priced separately, the price is depressed by the buyer who values each one less than the other buyer does; the bundling eliminates this effect."⁴⁸

Focusing solely on static results, Elhauge contends that this sort of "Stigler-type" tying has ambiguous efficiency effects.⁴⁹ While he concedes that such tying may increase total welfare by increasing output, he asserts that it may nonetheless decrease welfare by allocating some output to buyers who value it less than those who would have obtained it absent tying and might even value one tied product at less than its cost.⁵⁰ For example, suppose that the aforementioned products *X* and *Y* have a marginal cost of \$100 (rather than zero, as assumed above). A customer who values product *Y* at \$9,000 but does not value product *X* by at least \$1,000 would not obtain *Y* under the \$10,000 bundled price mentioned above, even though a customer who values *X* at \$10,000 and *Y* at only \$50 would do so. Social wealth would be reduced by

⁴⁶ See Stigler, *supra* note 44, at 153.

⁴⁷ Absent the tying of *X* and *Y* (i.e., with separate pricing), *A* would have enjoyed surplus of \$1,000 on *X* but no surplus on *Y*, and *B* would have enjoyed surplus of \$500 on *Y* but no surplus on *X*.

⁴⁸ POSNER, *supra* note 7, at 235.

⁴⁹ See Elhauge, *supra* note 9, at 406–07.

⁵⁰ See *id.* ("The mixed efficiency effects result because such tying decreases efficiency by reallocating some output to buyers who value it less than those who would have gotten it without tying (and might even value one product at less than it costs to make), unless that allocation inefficiency is offset by an output-increasing efficiency.").

allocating *Y* to the latter customer, who actually values it at less than its \$100 cost, but not the former, who values it at ninety times its cost.

While this sort of welfare loss is a theoretical possibility, it is more likely that the increased output resulting from “Stigler-type” bundling would more than offset any allocative inefficiency, leading to an increase in total welfare. Part II.B.1.b explains why this is so and why “Stigler-type” bundling may be the most efficient means of pricing many low-marginal-cost products.⁵¹

3. *Extracting Individual Consumer Surplus*

Elhauge maintains that tying may give rise to a third adverse nonforeclosure effect when buyers purchase multiple units of the tying product.⁵² The intuition behind this purported effect, first explained by Prof. M. L. Burstein,⁵³ is as follows:

- Every purchaser of a product values it at least the price she pays. Usually, the buyer’s subjective valuation (reservation price) for the product will exceed that price, giving her some consumer surplus. That is true even if the seller charges a monopoly price for the product. Thus, a monopolist charging a single profit-maximizing price does not capture all the surplus created by the sale of its product.
- When a buyer purchases multiple units of a tying product at the same per-unit price, the seller may assume that most units (all but perhaps the last unit purchased) are being sold for less than the buyer’s reservation price. That is because buyers of multiple units generally devote their first purchases to their most pressing needs, use later-purchased units for lower-valued purposes, and therefore experience diminishing marginal utility as additional units are purchased.
- By selling its monopoly product only on the condition that buyers also purchase another supracompetitively priced product, a seller may effectively usurp for itself some of the consumer surplus created by the sale of multiple units of the tying product. It does so by charging what is essentially a two-part tariff: the buyer effectively pays one amount (the surplus she loses from paying a supracompetitive price for the tied product) in order to obtain the right to purchase units of the tying product at a monopoly (or supracompetitive) price.

⁵¹ See *infra* Part III.B.1.b; see also Hovenkamp & Hovenkamp, *supra* note 27, at 956–58 (discussing how Stigler-type bundling may increase market output and enhance welfare).

⁵² See Elhauge, *supra* note 9, at 407–13.

⁵³ M.L. Burstein, *The Economics of Tie-In Sales*, 42 REV. ECON. & STAT. 68, 68–69 (1960); M.L. Burstein, *A Theory of Full-Line Forcing*, 55 NW. U. L. REV. 62, 73–91 (1961) [hereinafter Burstein, *Full-Line Forcing*]. While Professor Burstein’s affiliation with the Chicago School of antitrust analysis may be debatable, it is worth noting that he received his J.D., M.A., and Ph.D. degrees from the University of Chicago in, respectively, 1950, 1955, and 1957.

- As long as a buyer's expected consumer surplus from her purchases of tying products at the monopoly (or supracompetitive) price is likely to exceed the surplus she expects to lose from having to buy the tied product from the monopolist, the buyer will accept the tie-in and thereby transfer some of her surplus to the seller.

Working through a series of complicated (and somewhat unrealistic) examples, Elhauge shows the different ways a monopolist might set prices under different circumstances in order to extract for itself the maximum amount of consumer surplus.⁵⁴ Under some circumstances, the seller could charge multi-unit buyers of a tying product a monopoly price for that product and a monopoly price for the tied product, in which case it could use tying to transform one monopoly profit into two (though it could not thereby turn a single monopoly *power* into two).⁵⁵ Under other circumstances, the seller would maximize its profits by charging a below-monopoly, but still supracompetitive, price for the tying product and a monopoly or supracompetitive price for the tied product.⁵⁶

In any event, this “Burstein-type” tying resembles metering tying in that the seller ties a product to its monopoly product and charges a supracompetitive price for that tied product in order to measure and extract consumer surplus that would exist absent the tie-in.⁵⁷ It differs from a metering tie-in in that it requires that buyers purchase multiple units of the tying product but does not necessarily require that the seller lower the price of its tying product below monopoly levels in order to maximize profits (though a review of the litigated cases reveals no variable proportion tie-in that did not involve a reduction in the price of the tying product⁵⁸). As Part III.B.2 explains, because “Burstein-type” surplus extraction increases a seller's reward for developing a product over which it may price discriminate, it is actually likely to promote competition and enhance dynamic efficiency.⁵⁹

B. *The Foreclosure Effects*

The three aforementioned effects of tying may occur even if the tie-in does not cause substantial tied market foreclosure. By contrast, the fourth and fifth

⁵⁴ Elhauge, *supra* note 9, at 407–13.

⁵⁵ *Id.* at 410 (noting circumstances under which “tying does not result in *any* discount on the tying product, but does elevate tied prices to monopoly levels,” thereby “produc[ing] precisely the leveraging of one monopoly profit into two monopoly profits that the single monopoly profit theory said was impossible”).

⁵⁶ *Id.* at 410–11.

⁵⁷ It also resembles metering price discrimination in that it requires that the tied product not be used or sold in fixed proportions with the tying product.

⁵⁸ See Hovenkamp & Hovenkamp, *supra* note 27, at 942–43 (cataloguing cases involving variable proportion tie-ins and noting apparent absence of cases in which tying product price was not reduced).

⁵⁹ See *infra* Part III.B.2.

adverse effects Elhauge identifies can occur only if the tie-in at issue forecloses the tying firm's rivals from a substantial portion of available sales in the tied product market. Because these so-called "foreclosure effects" require an increase in the tying firm's output, they are in tension with the aforementioned power effects, which involve a contraction of output. The foreclosure effects are further distinguishable in that they, unlike the power effects, may enable the monopolist to obtain market power—the ability to affect market prices by withholding output—in another market. They may thus facilitate the extension of monopoly power, not just the extraction of surplus created by the monopolist's production of its monopoly product.⁶⁰

1. *Reducing Rival Competitiveness in the Tied Market*

The first sort of foreclosure-based harm may result if the tie-in at issue impairs the ability of tied market rivals to compete with the tying firm. Elhauge asserts that if the tie-in diverts a large portion of tied market business to the tying firm, that firm's tied market competitors may be required to reduce their output below minimum efficient scale,⁶¹ which may cause them to face per-unit costs that are higher than those of their tying rival.⁶² In addition, the tying firm's success in winning tied market sales may reduce its tied market rivals' economies of scope, distribution, supply, research, and learning, and it may keep those rivals from achieving desirable network effects.⁶³ By reducing the actual and expected efficiency of existing and prospective tied market competitors, tying may drive incumbent rivals to exit the tied market and may prevent entry by new firms. Moreover, Elhauge contends, tying may reduce the "aggressiveness" of price competition in tied markets: In those tied markets characterized by Cournot competition, it may cause the tying firm's rivals to follow one another in reducing output and raising price, and when Bertrand competition exists, it may create price-enhancing product differentiation.⁶⁴ Finally, Elhauge contends, tying may reduce tied market rivals' ability to

⁶⁰ See generally Carlton & Heyer, *supra* note 20 (distinguishing between firm conduct that extends market power and that which merely uses such power to extract consumer surplus and arguing that only the former should be regulated under the antitrust laws).

⁶¹ "Minimum efficient scale" is the level of output at which all available economies of scale are exhausted. Any firm that fails to grow to this level of production will have a competitive disadvantage against its larger rivals whose output levels exceed minimum efficient scale.

⁶² Elhauge, *supra* note 9, at 413–14.

⁶³ *Id.* (citing Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253, 320–24 (2003); Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 234–45 (1986); Eric B. Rasmusen, J. Mark Ramseyer & John S. Wiley, Jr., *Naked Exclusion*, 81 AM. ECON. REV. 1137, 1138–44 (1991); Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. 267, 267–70 (1983)).

⁶⁴ Elhauge, *supra* note 9, at 414.

expand in response to a price increase.⁶⁵ This may occur if the tying at issue effectively shrinks tied rivals by foreclosing them from sales opportunities.⁶⁶ In sum, Elhauge asserts, “a tie that forecloses enough of the tied market can reduce rival competitiveness by impairing rival efficiency, entry, existence, aggressiveness, or expandability.”⁶⁷

Despite Elhauge’s insinuation to the contrary, the notion that tying may reduce rival competitiveness in the tied product market is not a novel idea to members of the Chicago School. Chicago School scholars have long recognized this possible effect of tie-ins but have generally concluded that real-life instances in which tying is used to raise tied rivals’ costs are rare. As an empirical matter, tie-ins that are not aimed at eliminating double marginalization—a procompetitive effect⁶⁸—generally involve tied commodities (e.g., salt, dry ice, printer ink, fast food ingredients, etc.) and therefore cover only a tiny fraction of the tied product market. Accordingly, any effect dependent on substantially reducing sales opportunities for tied product rivals will be rare indeed. In his 1976 book on antitrust law, Judge Posner recognized that tying *could* result in monopolization of the tied product market, but he found no evidence that such cases were prevalent:

Only in the rare case where the sale of the tied product for use with the tying product represents a substantial share of all sales of the tied product might preventing the independent producers of the tied product from selling it to the customers of the tying product substantially affect competition in the market for the tied product.⁶⁹

2. Protecting the Degree of Tying Market Power

Elhauge also contends that tying may enhance a monopolist’s profits by “making the degree of tying market power higher than it would have been without tying.”⁷⁰ He identifies three ways tying might preserve or increase a

⁶⁵ *Id.*

⁶⁶ Elhauge further observes that reducing tied rival competitiveness may exacerbate the nonforeclosure surplus squeeze effect (the third so-called power effect). *Id.* at 415–16. Elhauge reasons that a prospective buyer of multiple units of a tying product, in deciding whether to accept a tie-in, does not ask whether his combined surplus on the tying and tied products, priced supracompetitively, exceeds his surplus on the tied product priced *competitively*, but instead whether his combined surplus on the tying and tied products, priced supracompetitively, exceeds the surplus he would obtain if he bought the tied product *at prices that are inflated because the tie has raised tied market rivals’ costs*. Thus, to the extent tying raises prices in the tied product market and reduces the consumer surplus experienced by buyers who forego the tie, consumers will be more likely to accept the tie-in. *Id.*

⁶⁷ *Id.* at 413.

⁶⁸ See *supra* note 27; *infra* notes 161–62 and accompanying text.

⁶⁹ RICHARD A. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 175 (1976).

⁷⁰ Elhauge, *supra* note 9, at 417.

monopolist's tying market power.⁷¹ First, he argues, tying may deter or delay entry into the tying market.⁷² He contends that competitors in a tied market are among the firms most likely to enter the tying market but may be weakened by tied market foreclosure occasioned by the tie-in.⁷³ In addition, if the tying product is normally used in conjunction with the tied product, a foreclosure-induced impairment of the tied product market makes entry into the tying product market less attractive.⁷⁴ Second, Elhauge argues, tied products are often partial substitutes for tying products, so foreclosure of the tied market tends to suppress competition from substitutes.⁷⁵ When the technological trend is away from the tying product and toward the tied product, the monopolist may use tying to foreclose rivals from the tied market and thereby "develop new market power over the technology of the future."⁷⁶

C. *The Combined Implications of the Power and Foreclosure Effects*

Each of the potential power and foreclosure effects discussed above has been recognized in the economic literature,⁷⁷ frequently by Chicago School scholars.⁷⁸ Elhauge contends, though, that "their combined implications have

⁷¹ *Id.*

⁷² *Id.* at 417–18.

⁷³ *Id.* at 417 ("[R]ecent literature shows that successful tied product makers are often more likely to evolve into tying product makers in future periods, in which case a firm has incentives to foreclose rivals in the tied market in order to prevent or reduce the erosion of its tying market power over time.").

⁷⁴ *Id.* ("[A] rival is often more likely to enter the tying market if buyers have attractive rival options in the tied market, especially if both products are essential inputs into some larger operation.").

⁷⁵ *Id.* at 418. For example, one of the allegations in the *Microsoft* case was that a web browser, the tied product, could be a partial substitute for an operating system, the tying product, and that Microsoft therefore sought to foreclose the market for browsers by tying its own browser to its monopoly operating system. See WILLIAM H. PAGE & JOHN E. LOPATKA, *THE MICROSOFT CASE: ANTITRUST, HIGH TECHNOLOGY, AND CONSUMER WELFARE* 29–32 (2007) (discussing "guiding narrative" of *Microsoft* case).

⁷⁶ Elhauge, *supra* note 9, at 419. While Elhauge refers to this situation as a third one in which tying may enhance market power in the tying product market, any enhancement of market power would actually occur in the tied, not the tying, market.

⁷⁷ *Id.* at 420 ("[E]ach of these effects has individually been recognized in the economic literature . . .").

⁷⁸ The effect Elhauge dubs "intraproduct price discrimination" was first recognized by Chicago School scholars Aaron Director and Ward Bowman. See *supra* notes 37–39 and accompanying text. The effect he calls "interproduct price discrimination" was first recognized by George Stigler, a Chicago School scholar. See *supra* notes 44–46 and accompanying text. Use of tying "to extract individual consumer surplus" was recognized by M.L. Burstein, who received his J.D., M.A., and Ph.D. degrees from the University of Chicago. See *supra* note 53 and accompanying text. Judge Posner, following Chicagoans before him, recognized that tie-ins may theoretically produce market power in the tied market by raising tied rivals' costs. See *supra* note 69 and accompanying text. And none other than Robert Bork publicly disparaged Microsoft (albeit, as a paid consultant to

not been appreciated.”⁷⁹ If the ratio of tied to tying products is not fixed, then a tie-in may cause the first power effect (price discrimination across buyers of the tying product). Absent strong positive correlation between demand for the tying product and the tied product, the second power effect (price discrimination across buyers of both products) may result. If the tie-in causes substantial foreclosure in the tied product market, then the arrangement may cause either or both foreclosure effects (enhancement of market power in the tied and/or tying markets). Thus, Elhauge reasons, tying can be assumed not to have anticompetitive effects only when the tie-in at issue combines three features: (1) a fixed ratio between tying and tied products, (2) strong positive demand correlation between the tying and tied products, and (3) no substantial foreclosure of rivals from the tied product market.⁸⁰

Because these criteria are rarely all satisfied, Elhauge concludes, the prevailing liability rule, which deems a tie-in illegal as long as the defendant possesses market power in the tying product market, is generally appropriate.⁸¹ And because many bundled discounts have coercive effects that render them tantamount to tie-ins, he argues, a similar liability rule (rather than one that compares the cost and effective price of the items in the bundle) should govern bundled discounting.⁸²

The following Parts set forth in more detail, and then critique, Professor Elhauge’s conclusions about the appropriate liability rules governing tying and bundled discounts. Part III addresses tying; Part IV, bundled discounts.

Netscape) for allegedly using tying to weaken tied market competitors that might try to enter the tying market. *See, e.g.,* Robert Bork, *Browser Bork Replies*, SLATE (Dec. 30, 1998), <http://www.slate.com/id/12059/> (summarizing “the case against Microsoft’s attempted destruction of the Netscape browser in order to defend its monopoly in operating systems”). Any insinuation that the Chicago School has been blind to the theories Elhauge discusses is simply wrong. For the most part, though, Chicago School scholars have concluded that the theoretical effects Elhauge emphasizes are unlikely to materialize in actual practice and therefore should not dictate the liability rule applicable to tying. *See, e.g., supra* note 69 and accompanying text.

⁷⁹ Elhauge, *supra* note 9, at 420.

⁸⁰ *Id.* at 419–20.

⁸¹ *Id.* at 421 (“If one . . . assumes that the power effects are anticompetitive, then the quasi-per se rule nicely fits the conditions for proving anticompetitive effects.”). Given his conclusion about the circumstances in which tying could occasion no anticompetitive effect, *see supra* note 80 and accompanying text, Elhauge would create an exception to the quasi-per se rule and would require a showing of substantial tied market foreclosure when (1) the tying and tied products are sold or used in fixed proportions, and (2) the tied product is useless without the tying product. *See* Elhauge, *supra* note 9, at 443.

⁸² *Id.* at 450–51.

III. WHY TIED MARKET FORECLOSURE SHOULD BE A PREREQUISITE TO TYING LIABILITY

Under current antitrust doctrine, an instance of tying is illegal if it involves truly separate tying and tied products, the defendant possesses market power in the tying product market, and the tie-in affects a "not insubstantial" dollar volume (*not* percentage) of commerce in the tied product market.⁸³ This liability rule is commonly referred to as a "quasi-per se rule" because the plaintiff must establish something more than the mere occurrence of the business practice, but once it does so, liability is imposed regardless of market effect.⁸⁴ As noted, efficiency-minded scholars from both the Chicago and Harvard Schools of antitrust analysis have criticized this rule for being overly prohibitory and have argued that a tying plaintiff should have to establish, at a minimum, that the tie-in threatens foreclosure of a substantial percentage of marketing opportunities in the tied product market.⁸⁵ Such an approach, these scholars say, would reconcile tying doctrine with economic learning and would harmonize the liability rules on tying and exclusive dealing, a salutary development since many business practices may be alternatively classified as either tie-ins or instances of exclusive dealing.⁸⁶

Elhaug maintains that these critics are mistaken and that the current liability rule is appropriate. He contends that tying's so-called power effects, which ultimately amount to price discrimination and surplus extraction, may exist even in the absence of substantial tied market foreclosure and are sufficient in themselves to warrant imposition of liability.⁸⁷ As a legal matter, he argues, the U.S. Supreme Court has recognized that these effects are

⁸³ *Fortner Enters., Inc. v. U.S. Steel Corp. (Fortner I)*, 394 U.S. 495, 501, 503 (1969); see also *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 461–62 (1992). Notably, the requirement that the tie-in affect a "not insubstantial" amount of commerce in the tied product market does not require substantial—or anything more than *de minimis*—foreclosure of that market. See *Fortner I*, 394 U.S. at 501 ("The requirement that a 'not insubstantial' amount of commerce be involved makes no reference to the scope of any particular market or to the share of that market foreclosed by the tie . . . [N]ormally the controlling consideration is simply whether a total amount of business, substantial enough in terms of dollar-volume so as not to be merely *de minimis*, is foreclosed to competitors by the tie . . .").

⁸⁴ Contrary to Elhaug's assertion, there is no general efficiencies defense under the quasi-per se rule. See *infra* Part III.B.3.

⁸⁵ See *supra* notes 6–7 and accompanying text.

⁸⁶ See, e.g., HOVENKAMP, *supra* note 6, at 198–206 (observing that tied market foreclosure is a prerequisite to efficiency losses from tying and that many business practices, such as requirements that franchisees purchase their inputs from franchisors, may alternatively be characterized as tie-ins (i.e., in order to license the franchisor's intellectual property, the franchisee must also purchase the franchisor's materials) or instances of exclusive dealing (i.e., the franchisee agrees to purchase its inputs exclusively from the franchisor)).

⁸⁷ Elhaug, *supra* note 9, at 420–21.

anticompetitive.⁸⁸ As a policy matter, he says, the Court was right to do so.⁸⁹ He is wrong on both counts.

A. Tying's Price-Discrimination Effects Are Not "Anticompetitive" Under Governing Supreme Court Precedent.

In support of his claim that Supreme Court precedent deems tying's nonforeclosure, price-discrimination effects to be anticompetitive, Elhauge cites both tying doctrine itself and several specific statements in Supreme Court opinions. He begins with doctrine, arguing that the legal test for tying liability (per se illegality if the defendant has market power in the tying product market and the tie-in affects a not insubstantial volume of commerce in the tied market)⁹⁰ makes sense only if tying's price-discrimination effects are considered anticompetitive:

[T]he power effects do not require a substantial tied foreclosure share, but they do require tying market power. Further, the extent to which the power effects harm consumer welfare turns on the dollar amount of the tied market covered, rather than on the tied market foreclosure share.

Thus, the quasi-per se rule makes perfect sense if the power effects are deemed anticompetitive, but no sense if they are not. If we restrict ourselves to the traditional legal question of figuring out which normative theory best fits the legal doctrine, treating Supreme Court precedent as authoritative, then the clear answer is that the doctrine must embrace the proposition that the power effects are anticompetitive.⁹¹

Of course, this assumes that the Supreme Court has succeeded in crafting a liability test that is narrowly tailored to prevent only those effects it deems anticompetitive. In reality, there is frequently a disconnect between the liability rule the Court adopts and the policy concerns underlying that rule. This is especially true in antitrust, where developments in economic theory precede the evolution of the law, and the legal doctrine changes only as new cases, presenting narrow legal issues for resolution, come before the Supreme Court through the common law process.⁹² Moreover, courts frequently posit antitrust

⁸⁸ *Id.* at 420–26.

⁸⁹ *Id.* at 426–42.

⁹⁰ See *supra* note 83 and accompanying text.

⁹¹ Elhauge, *supra* note 9, at 421 (footnote omitted).

⁹² For example, the maximally prohibitory per se rule against vertical minimum resale price maintenance (RPM), see *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373, 406–09 (1911) (declaring minimum RPM to be illegal per se), *overruled by* *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 907 (2007), persisted long after the Court realized that a number of the effects that initially motivated the rule (e.g., interference with dealer freedom, restraints on alienation of chattels) are not, in fact, anticompetitive. See *Bus. Elecs. Corp. v. Sharp Elecs. Corp.*, 485 U.S. 717, 731–36 (1988)

liability rules that are over- or under-inclusive out of a concern for minimizing the sum of decision and error costs.⁹³ With respect to tying, it is possible that the Court has declined to require a showing of substantial tied market foreclosure not because it believes anticompetitive harm may result absent such foreclosure but because it is concerned about excessive decision or error costs.⁹⁴ While such a concern would likely be misplaced,⁹⁵ it may have played a role in fashioning the Court's liability rule.

Perhaps recognizing the danger of inferring too much about the Court's policy conclusions from the specific liability rules it has articulated, Elhauge seeks to buttress his legal argument by pointing to explicit statements in Supreme Court opinions that, he says, demonstrate that the Court deems tying's price-discrimination effects to be anticompetitive.⁹⁶ The most direct such statement first appeared in a dissenting opinion but was later quoted in majority opinions of the Supreme Court. In *Fortner I*, dissenting Justice White, joined by Justice Harlan, purported to state "the rationale on which the illegality of tying

(rejecting much of the theoretical underpinning of *Dr. Miles*). It would have been fallacious to argue in 2006, the year before the per se rule was overruled, that the persistence of the rule proved that the Supreme Court deemed some or all of these effects to be anticompetitive. See *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 761–62 n.7 (1984) (declining to overrule *Dr. Miles* not because the Court believed minimum RPM to be always or almost always anticompetitive but because the issue had not been properly presented through the appellate review process).

⁹³ For example, the governing test for predatory pricing liability approves some instances of low but above-cost pricing that, by the Supreme Court's own admission, could be anticompetitive. See *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 223 (1993) (acknowledging that some instances of low but above-cost pricing may harm competition, but permitting such pricing in order to avoid overdeterrence). One should not infer from the Court's rule, which rests in large part on a concern to avoid error costs, see *id.*, that the Court has concluded that low but above-cost prices can never be anticompetitive. On the other hand, naked price fixing among competitors who collectively lack market power (e.g., two small wheat farmers) is per se illegal, even though it could not occasion anticompetitive harm. See *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 224 n.59 (1940). One should not infer from the Court's blanket prohibition, which aims to minimize decision costs, that the Court deems every instance of horizontal price fixing to cause anticompetitive harm. For a general discussion of how courts craft antitrust liability rules in light of decision and error costs, see Thomas A. Lambert, *The Roberts Court and the Limits of Antitrust*, 52 B.C. L. REV. 871 (2011) (setting forth the decision-theoretic model of antitrust jurisprudence and demonstrating the Roberts Court's adherence to it).

⁹⁴ *Accord* *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 15 n.25 (1984) ("The rationale for per se rules in part is to avoid a burdensome inquiry into actual market conditions in situations where the likelihood of anticompetitive conduct is so great as to render unjustified the costs of determining whether the particular case at bar involves anticompetitive conduct.").

⁹⁵ Requiring a showing of tied market foreclosure would likely reduce error costs (specifically, the overdeterrence occasioned by false positives) by far more than any increase in decision costs.

⁹⁶ Elhauge, *supra* note 9, at 422–26.

arrangements is based.”⁹⁷ The dissenters first pointed to tying’s ability to “work significant restraints on competition in the tied product” by foreclosing competitors from the tied product market and by raising barriers to entry in that market.⁹⁸ They then observed that tying may have additional effects. Elhauge selectively quotes from the dissent, mentioning two of the effects noted: “[T]ying arrangements may be used . . . as a counting device to effect price discrimination; and they may be used to force a full line of products on the customer so as to extract more easily from him a monopoly return on one unique product in the line.”⁹⁹ He infers from this mention of tying’s potential price-discrimination and surplus-extraction effects that the dissenting justices deemed these effects to be anticompetitive.¹⁰⁰

A more complete examination of the White–Harlan dissent suggests such an inference is unwarranted. In quoting from the *Fortner I* dissent, Elhauge excludes one of the effects the dissenting justices recognized. Replacing Elhauge’s ellipsis with the omitted text, the White–Harlan dissent reads as follows:

In addition to these anticompetitive effects in the tied product [i.e., those related to foreclosure from, and the creation of entry barriers into, the tied product market], tying arrangements may be used to *evade price control in the tying product through clandestine transfer of the profit to the tied product*; they may be used as a counting device to effect price discrimination; and they may be used to force a full line of products on the customer so as to extract more easily from him a monopoly return on one unique product in the line.¹⁰¹

⁹⁷ *Fortner I*, 394 U.S. 495, 512 (1969) (White, J., dissenting).

⁹⁸ *Id.* at 513. The dissent explained:

The tying seller may be working toward a monopoly position in the tied product and, even if he is not, the practice of tying forecloses other sellers of the tied product and makes it more difficult for new firms to enter that market. They must be prepared not only to match existing sellers of the tied product in price and quality, but to offset the attraction of the tying product itself. Even if this is possible through simultaneous entry into production of the tying product, entry into both markets is significantly more expensive than simple entry into the tied market, and shifting buying habits in the tied product is considerably more cumbersome and less responsive to variations in competitive offers.

Id. (footnote omitted).

⁹⁹ Elhauge, *supra* note 9, at 422 (quoting *Fortner I*, 394 U.S. at 513–14 (White, J., dissenting)) (footnotes omitted)).

¹⁰⁰ *Id.* (observing that the dissent’s reference to metering price discrimination and consumer surplus extraction “ma[de] clear that the dissent . . . believed that discrimination and extraction created anticompetitive effects separate from any anticompetitive effects in the tied market”).

¹⁰¹ *Fortner I*, 394 U.S. at 513–14 (White, J., dissenting) (emphasis added) (footnotes omitted).

This is a significant omission. If, as Elhauge suggests, the dissenting justices had meant that the additional effects they noted are *anticompetitive* effects, then they would have been implying that evasion of price controls is anticompetitive. But quite often—e.g., any time price controls are implemented for reasons other than to constrain a seller's exercise of market power—evasion of price controls is actually output-enhancing and thus pro- not anti-competitive.¹⁰² The inclusion of a frequently procompetitive effect on the list of nonforeclosure effects of tying suggests that the dissenting justices did not mean to imply that the listed effects should be deemed anticompetitive.

Of course, this passage from *Fortner I* occurred in dissent and is thus, by itself, of little persuasive value. But Elhauge also cites two majority Supreme Court opinions—*Jefferson Parish* and *Independent Ink*—in support of his claim that the Court deems tying's price-discrimination effects to be anticompetitive.¹⁰³ In *Jefferson Parish*, the Court favorably quoted the aforementioned passage from Justice White's *Fortner I* dissent¹⁰⁴ and cited that dissent in observing that tying "can increase the social costs of market power by facilitating price discrimination, thereby increasing monopoly profits over what they would be absent the tie."¹⁰⁵ The Court also cited the Bowman, Burstein, and Stigler articles that purport to demonstrate (respectively) how tying achieves intraproduct price discrimination, extracts individual consumer surplus, and facilitates interproduct price discrimination.¹⁰⁶ Elhauge thus concludes that the *Jefferson Parish* Court deemed these various nonforeclosure effects of tying to be anticompetitive.¹⁰⁷

Elhauge ignores, though, a passage in which the *Jefferson Parish* Court more directly addressed the preconditions to anticompetitive harm from tying

¹⁰² See Herbert Hovenkamp, *Tying Arrangements and Class Actions*, 36 VAND. L. REV. 213, 234 (1983) ("Tying arrangements in price-regulated industries may be efficiency creating."); Thomas B. Leary, Comm'r, Fed. Trade Comm'n, Antitrust Law as a Balancing Act Address (Dec. 17, 1999), available at <http://www.ftc.gov/speeches/leary/leary991217.shtm> (discussing the use of tie-ins to evade price regulation and observing that "[w]hile regulatory evasion [via tying] may supply the motive for particular conduct that may be otherwise inexplicable, it does not constitute independent evidence of competitive harm").

¹⁰³ Elhauge, *supra* note 9, at 422–25 (discussing majority opinions in *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2 (1984), and *Illinois Tool Works, Inc. v. Independent Ink, Inc.*, 547 U.S. 28 (2006)). Elhauge also discusses the dissenting opinion of Justice Scalia, joined by Justices O'Connor and Thomas, in *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451 (1992), noting that even these "relatively conservative Justices" approvingly quoted the *Fortner I* dissent. Elhauge, *supra* note 9, at 424. Once again, Elhauge omits from the *Kodak* dissenters' quotation the part of the *Fortner I* dissent referring to the use of tying "to evade price control in the tying product through clandestine transfer of the profit to the tied product." *Fortner I*, 394 U.S. at 513 (White, J., dissenting); see also *supra* notes 99–102 and accompanying text.

¹⁰⁴ *Jefferson Parish*, 466 U.S. at 13 n.19.

¹⁰⁵ *Id.* at 14–15 (citation omitted).

¹⁰⁶ *Id.* at 15 n.23 (citing Bowman, *supra* note 25; Burstein, *Full-Line Forcing*, *supra* note 53; Stigler, *supra* note 44).

¹⁰⁷ Elhauge, *supra* note 9, at 423.

and clarified unequivocally that tied market foreclosure is, in fact, such a prerequisite. After cataloguing the various effects of tying arrangements (including, as Elhauge emphasizes, tying's potential to facilitate price discrimination and thereby enhance the tying monopolist's profits), the Court turned to the conditions under which tying may create *anticompetitive* consequences that justify *per se* condemnation, and it emphasized two situations in which such anticompetitive harm would *not* occur:

[A]pplication of the *per se* rule focuses on the probability of anticompetitive consequences. . . . If only a single purchaser were "forced" with respect to the purchase of a tied item, the resultant impact on competition would not be sufficient to warrant the concern of antitrust law. It is for this reason that we have refused to condemn tying arrangements unless a substantial volume of commerce is foreclosed thereby. Similarly, when a purchaser is "forced" to buy a product he would not have otherwise bought even from another seller in the tied-product market, there can be no adverse impact on competition because no portion of the market which would otherwise have been available to other sellers has been foreclosed.

Once this threshold is surmounted, *per se* prohibition is appropriate if anticompetitive forcing is likely.¹⁰⁸

This passage makes clear that, in the Supreme Court's view, tied market foreclosure is necessary for *anticompetitive* consequences to result from tying. If, as Elhauge contends, price discrimination or the extraction of additional consumer surplus constituted an anticompetitive harm that could justify prohibiting tying under the antitrust laws, then both scenarios in the quoted passage would give rise to antitrust liability. It would be entirely possible for a monopolist to price discriminate against, and extract additional surplus from, a single high-value consumer by requiring that consumer to purchase a tied product in order to obtain the monopolist's tying product. Similarly, a monopolist could price discriminate or extract additional consumer surplus by imposing a tie-in that forced a purchaser to buy a tied product he would not have purchased from another seller in the tied product market. Neither scenario, however, would likely generate significant foreclosure in the tied market. In insisting (1) that a single-customer tie-in would not impact competition sufficiently "to warrant the concern of antitrust law" and (2) that a tie-in involving a tied product the customer would not otherwise have bought would have "no adverse impact on competition because no portion of the market which would otherwise have been available to other sellers has been foreclosed,"¹⁰⁹ the Court made clear that price discrimination and surplus extraction are not anticompetitive effects of tying and that market foreclosure is a prerequisite to anticompetitive harm.

¹⁰⁸ *Jefferson Parish*, 466 U.S. at 15–16 (citations omitted).

¹⁰⁹ *Id.* at 16.

The Supreme Court's most recent tying decision removed any doubt about that proposition. In *Independent Ink*, the Court ruled that a tying defendant's possession of a patent on its tying product is not, in itself, sufficient to establish that the defendant possessed market power in the tying product market.¹¹⁰ The defendant, a printer manufacturer, had required purchasers of its printers to use its ink exclusively. The Court of Appeals for the Federal Circuit had concluded that the defendant's possession of a patent on its printhead technology established its market power in the printer market.¹¹¹ The Supreme Court reversed on that point and returned the case to the district court so that the plaintiff could have an opportunity to define the relevant tying product market and prove the defendant's possession of power within it.¹¹² Elhauge contends that the Court's remand instruction "confirm[s] that power effects suffice" to establish anticompetitive harm.¹¹³ Had the Court believed that tied market foreclosure is a necessary prerequisite to anticompetitive harm, Elhauge asserts, its remand instruction "would have required evidence of a substantial tied foreclosure share, which would have been implausible because the ink used for one specialized sort of printer is hardly likely to be a big share of all ink."¹¹⁴

Elhauge's reading of *Independent Ink* is unpersuasive for two reasons. As an initial matter, the Supreme Court's focused remand instruction was dictated by the narrow legal issue before the Court. The *Independent Ink* Court granted certiorari on a precise question—whether a tying defendant's possession of a patent on the tying product should give rise to a presumption of market power in the tying product market¹¹⁵—and the briefing and arguments of the parties therefore focused exclusively on that question.¹¹⁶ It would have been improvident

¹¹⁰ Ill. Tool Works, Inc. v. Indep. Ink, Inc., 547 U.S. 28, 45–46 (2006).

¹¹¹ Indep. Ink, Inc. v. Ill. Tool Works, Inc., 396 F.3d 1342, 1352 (Fed. Cir. 2005).

¹¹² *Indep. Ink*, 547 U.S. at 46.

¹¹³ Elhauge, *supra* note 9, at 425.

¹¹⁴ *Id.*

¹¹⁵ See Petition for Writ of Certiorari at I, *Indep. Ink*, 547 U.S. 28 (No. 04-1329), 2005 WL 779574, at *I (construing question on appeal as "[w]hether, in an action under Section 1 of the Sherman Act, 15 U.S.C. § 1, alleging that the defendant engaged in unlawful tying by conditioning a patent license on the licensee's purchase of a non-patented good, the plaintiff must prove as part of its affirmative case that the defendant possessed market power in the relevant market for the tying product, or market power instead is presumed based solely on the existence of the patent on the tying product").

¹¹⁶ Both the defendant-petitioner and the plaintiff-respondent construed the issue before the Court as limited to the narrow question:

Whether, in an action under Section 1 of the Sherman Act, 15 U.S.C. § 1, alleging that the defendant engaged in unlawful tying by conditioning a patent license on the licensee's purchase of a non-patented good, the plaintiff must prove as part of its affirmative case that the defendant possessed market power in the relevant market for the tying product, or whether market power instead is presumed based solely on the existence of a patent on the invention embodied in the tying product.

for the Court to address the broader issue of whether substantial tied market foreclosure should be required for tying liability when the petitioner had not sought review of the question and neither the parties nor amici had briefed the issue.¹¹⁷ Accordingly, the Court addressed only the narrow question at hand and crafted its remand instruction to reflect only its resolution of that discrete matter.

Moreover, while the *Independent Ink* Court was not presented with the question of whether substantial tied market foreclosure should be a prerequisite to tying liability, it did consider—and rejected—the argument that requirements ties resulting in price discrimination and extraction of consumer surplus should be condemned as anticompetitive.¹¹⁸ In seeking to sustain the judgment in its favor, the plaintiff-respondent presented the Court with a narrower alternative to its requested holding that possession of a patent creates a presumption of market power. That narrower alternative would have created a presumption of tying market power when a defendant with a patent on its tying product imposes a “requirements tie” on purchasers of that product, mandating that they also purchase their requirements of unpatented complements from the defendant.¹¹⁹ As professors Barry Nalebuff, Ian Ayres, and Lawrence Sullivan explained in an amicus brief advocating this narrower holding, the presumption of tying market power in cases involving patented tying products and requirements ties would enable antitrust to police the use of tie-ins to price discriminate and extract additional consumer surplus by metering consumer demand for the tying product.¹²⁰ Nalebuff, Ayres, and Sullivan contended that such price discrimination and surplus extraction are anticompetitive effects that are properly addressed by antitrust.¹²¹

The Supreme Court was unpersuaded. While the Court acknowledged that metering tie-ins may result in price discrimination (and even referenced the *Jefferson Parish* footnote citing the Bowman, Burstein, and Stigler articles),¹²² it rejected the narrower holding advocated by the amici professors because it concluded that price discrimination “occurs in fully competitive markets” and that “[m]any tying arrangements, even those involving patents and requirements ties,

Brief for the Petitioners at I, *Indep. Ink*, 547 U.S. 28 (No. 04-1329), 2005 WL 1864122, at *I; Brief for Respondent at i, *Indep. Ink*, 547 U.S. 28 (No. 04-1329), 2005 WL 2427645, at *i.

¹¹⁷ *Accord* Monsanto Co. v. Spray-Rite Serv. Corp., 465 U.S. 752, 761–62 n.7 (1986) (declining to abrogate per se rule against minimum RPM, despite misgivings about the rule, because issue had not been properly appealed or briefed).

¹¹⁸ See *Indep. Ink*, 547 U.S. at 44–45.

¹¹⁹ *Id.* at 43–44.

¹²⁰ See Brief of Professors Barry Nalebuff, Ian Ayres, and Lawrence Sullivan as Amici Curiae in Support of Respondent at 4, *Indep. Ink*, 547 U.S. 28 (No. 04-1329), 2005 WL 2427646, at *4.

¹²¹ *Id.* at 18–27 (“The Use of Tying as a Metering Device Implicates Serious Antitrust Concerns.”).

¹²² *Indep. Ink*, 547 U.S. at 44 (citing *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 15 n.23 (1984)).

are fully consistent with a free, competitive market.”¹²³ The Court thus made clear that, while it understands that price discrimination and additional surplus extraction are possible *effects* of tying, they are not appropriately deemed *anticompetitive* effects that justify condemnation under the antitrust laws. Elhauge is thus wrong in concluding that governing Supreme Court precedent deems the nonforeclosure (power) effects of tying to be anticompetitive.

B. Price Discrimination Induced by Tying Should Not Be Deemed Anticompetitive and Is Inappropriately Condemned Under Governing Liability Rules.

In addition to his descriptive claim that Supreme Court precedent deems tying's price-discrimination effects to be anticompetitive, Elhauge asserts the normative claim that those effects *should* be deemed anticompetitive. He contends that tying-induced price discrimination reduces consumer welfare and has, at best, ambiguous effects on total welfare.¹²⁴ He rejects the view that competition is furthered by a policy permitting monopolists to extract higher profits through tying that does not induce significant tied market foreclosure.¹²⁵ And he insists that the few tie-ins that do enhance total welfare would pass muster under the currently prevailing liability rule, which includes an efficiencies defense.¹²⁶ He is wrong on all these points.

1. The Tying-Induced Price Discrimination Observed in Actual Practice Generally Enhances Static Efficiency.

Elhauge's discussion of the static (or, in his words, *ex post*) welfare effects of tying-induced price discrimination focuses primarily on tying aimed at metering consumer demand. He purports to show that the price discrimination facilitated by such tying generally reduces total welfare.¹²⁷ He says little about the efficiency effects of tying that induces Stigler-type (interproduct) price discrimination.¹²⁸ In reality, both forms of tying-induced price discrimination, as actually implemented in the real world as opposed to the economist's textbook, typically enhance total welfare.

¹²³ *Id.* at 45.

¹²⁴ Elhauge, *supra* note 9, at 426–35.

¹²⁵ *Id.* at 439–42.

¹²⁶ *Id.* at 401 (“[T]he quasi-per se rule . . . does not condemn ties if the defendant proves an offsetting efficiency.”); *id.* at 427 (“To the extent ties empirically have efficiencies that offset adverse power effects, the quasi-per se rule allows defendants to prove them.”); *id.* at 430 (“Because the quasi-per se rule prohibits ties only when a defendant with market power cannot prove an offsetting efficiency, it will condemn ties that achieve intraproduct price discrimination only when efficiencies fail to offset adverse power effects.”).

¹²⁷ *Id.* at 430–34.

¹²⁸ *Id.* at 434–35.

a. Price Discrimination via Metering Tie-Ins

Elhauge's claim that metering tie-ins typically reduce welfare is premised on two assumptions: that metering tie-ins are a form of third-degree price discrimination and that they often fail to enhance output by bringing new consumer groups into the market. Both assumptions are unwarranted. In actuality, metering tie-ins constitute a form of second-degree price discrimination, which typically enhances consumer welfare and may do so even if it does not occasion an increase in output. Moreover, even if one shoehorns metering tie-ins into the category of third-degree price discrimination, as Elhauge does, the sort of tie-ins observed in practice typically bring new consumers into the market and thereby expand output and total welfare.

Following the lead of economist A.C. Pigou, scholars have traditionally categorized price discrimination schemes into three types.¹²⁹ First-degree price discrimination is "perfect" price discrimination,¹³⁰ in which each consumer is charged her particular reservation price.¹³¹ Such price discrimination maximizes market efficiency, for each unit that is valued by a consumer at an amount exceeding its cost is produced, and deadweight loss is eliminated (though all surplus goes to the producer).¹³² Because it is impossible for sellers to know buyers' reservation prices, first-degree price discrimination does not exist in reality.

Second-degree price discrimination occurs when a seller charges different prices to different consumers but does so pursuant to a single price schedule that enables consumers to select the applicable price through their particular consumption patterns.¹³³ For example, a price schedule incorporating quantity discounts allows any consumer to opt for lower per-unit prices by achieving certain purchase targets. Similarly, a fare schedule offering different prices for first- and second-class travel enables different consumers to choose different prices.¹³⁴

¹²⁹ See A.C. PIGOU, *THE ECONOMICS OF WELFARE* 278–79 (4th ed. 1932).

¹³⁰ See, e.g., Klein & Wiley, *supra* note 31, at 612.

¹³¹ A reservation price is the subjective value a consumer ascribes to, and is thus willing to pay for, a product. If she pays her reservation price, a consumer receives no surplus from a purchase. Any price below the reservation price creates some consumer surplus. At a price above the reservation price, the consumer would not voluntarily purchase the product at issue.

¹³² See Hovenkamp & Hovenkamp, *supra* note 27, at 932; Klein & Wiley, *supra* note 31, at 612–13 (observing that with perfect price discrimination, "the seller would increase output to the efficient point where price equals marginal cost"); *supra* note 131.

¹³³ See PIGOU, *supra* note 129, at 279; Hovenkamp & Hovenkamp, *supra* note 27, at 934.

¹³⁴ While different classes of travel involve different amenities, a class-based fare schedule is still discriminatory in that the different fares involve different ratios of price to marginal cost—i.e., the seller mark-up is greater on first-class. See Hovenkamp & Hovenkamp, *supra* note 27, at 938 (observing that as a technical matter, price discrimination involves "sales at differing ratios of price to marginal cost").

Third-degree price discrimination occurs when a seller divides consumers into groups and charges the various groups different prices based on the seller's estimate of group members' reservation prices.¹³⁵ Many movie theaters, for example, offer discounts to children, students, and senior citizens on the theory that such individuals are unwilling to pay as much as nonstudent (and thus presumably employed) adults. Whereas a second-degree price discrimination scheme allows consumers to select the price they pay by altering their consumption patterns, consumers subject to third-degree price discrimination cannot change their price without altering their status (e.g., an eighteen-year-old movie patron could obtain a student discount by enrolling in school, but not by purchasing more, fewer, or different movie tickets).

Elhauge maintains that metering tie-ins amount to third-degree price discrimination that tends to reduce total welfare.¹³⁶ Third-degree price discrimination is "imperfect," Elhauge correctly observes,¹³⁷ because membership in a customer group (e.g., senior citizens) is merely a proxy for willingness to pay for the product at issue,¹³⁸ and within any group of buyers, there will be a range of reservation prices.¹³⁹ Given that group members differ in their willingness to pay, each purchaser category in a third-degree price discrimination scheme will exhibit a downward-sloping demand curve (indicative of the fact that more customers within the group will buy the product, and more units will be sold, as the price is reduced). Accordingly, a monopolist engaged in third-degree price discrimination will consider each group's demand function and will seek to set each group's price at the level that maximizes the monopolist's profits on sales to that group. At that group-specific price, some low-valuation members will be priced out of the market even though their willingness to pay exceeds the seller's costs. Thus, the pricing for each particular customer group will be monopolistic and will involve some deadweight loss. Assuming linear demand, the discriminatory pricing scheme will not change the monopolist's profit-maximizing output unless the price discrimination generates purchases by a category of buyers who would buy none of the product at a uniform monopoly price but will do so at a discriminatory price. The discrimination will also tend to reallocate output from high-value buyers (who face higher prices because of the discriminatory pricing and will therefore purchase less) to low-value buyers (who face lower prices and will therefore purchase more).¹⁴⁰ Taken together, these two

¹³⁵ See PIGOU, *supra* note 129, at 279; Hovenkamp & Hovenkamp, *supra* note 27, at 933.

¹³⁶ Elhauge, *supra* note 9, at 431.

¹³⁷ See *id.*

¹³⁸ For example, while many senior citizens live on a fixed income and are particularly price-sensitive, some seniors may be willing to pay much more than the average moviegoer for a movie ticket. Senior status is imperfectly correlated with a lower reservation price.

¹³⁹ For example, even if all senior citizens valued movie tickets less than the average moviegoer, some seniors would value the tickets more than other seniors.

¹⁴⁰ Suppose, for example, that the seller's profit-maximizing price for the group of high-valuation "disfavored" consumers is \$8, and the profit-maximizing price for the low-

features of third-degree price discrimination—no change in output, but a redistribution from high- to low-value consumers—will reduce total welfare.¹⁴¹

According to Elhauge, metering tie-ins are a form of third-degree price discrimination.¹⁴² Illustrating the welfare effects of such a pricing scheme with a stylized example involving printers and ink cartridges, Elhauge purports to show that the price discrimination inherent in a metering tie-in will tend to reduce total welfare.¹⁴³ Below, I show that metering tie-ins are likely welfare-enhancing even if conceived of as instances of third-degree price discrimination.¹⁴⁴ A more significant flaw in Elhauge's analysis, though, is that he miscategorizes metering tie-ins as third-degree price discrimination when they really involve second-degree price discrimination. That mischaracterization has important implications, for instances of second- and third-degree price discrimination have quite different welfare effects.

i. Metering Tie-Ins Are Really a Form of Welfare-Enhancing, Second-Degree Price Discrimination.

Central to the welfare analysis of third-degree price discrimination (particularly to the conclusion that such discrimination reduces total welfare unless it occasions an increase in output) is the inability of consumers to switch among pricing groups when the seller's discriminatory scheme "misfires." Consider, for example, a movie theater owner who, reasoning that non-student adults typically have higher reservation prices for movies than do students, charges \$10 for an adult ticket and \$7 for a student ticket. Those prices are the respective profit-maximizing prices for all adults and all students in the locality. Suppose, though, that an unemployed adult would pay only \$9.75 to see the movie. She would not be able to do so, even though a student who values admission at only \$7.25 would be admitted. Because the adult could not alter her consumption in any way so as to avail herself of the \$7 student price, the price discrimination scheme would allocate theater seats in a wealth-destructive fashion (i.e., from a patron who values the seat at \$9.75 to one who values it at only \$7.25).¹⁴⁵ Accordingly, if we assume linear demand among adults and

valuation "favored" consumers is \$5. A disfavored consumer valuing the product at \$7.90 would not receive the product, whereas a favored consumer valuing it at \$5.10 would receive it. Distributing the unit to the favored consumer instead of the disfavored one reduces consumer surplus by \$2.80. *See Hovenkamp & Hovenkamp, supra* note 27, at 934.

¹⁴¹ *See* Elhauge, *supra* note 9, at 431–32.

¹⁴² *Id.* at 431 (observing that metering tie-ins involve "categorizing tying product buyers into different groups (based on their number of tied product purchases) and charging each group a different effective price for the same tying product (by inflating tied product prices)").

¹⁴³ *Id.* at 432–33.

¹⁴⁴ *See infra* Part III.B.1.a.ii.

¹⁴⁵ The fact that this price discrimination scheme fails to satisfy the demand of a "higher-valuing" consumer in favor of a "lower-valuing" one is what renders this scheme a third-degree price discrimination scheme. As Pigou explained, "This degree [third], it will be

students, the price discrimination scheme here could not enhance total welfare unless it increased the total number of tickets sold.

In contrast to a third-degree price discrimination scheme in which individual consumers find themselves locked into groups and denied pricing offered to others, simple metering tie-ins offer every consumer the same prices for the tying and tied products.¹⁴⁶ In general, the price of the tying (monopoly) product is reduced from the profit-maximizing level, and the price of the tied (competitive) product is increased above competitive levels.¹⁴⁷ For example, a photocopier monopolist might lower its copier price from the profit-maximizing level of \$400 to \$200 but then require buyers to purchase its brand of paper at \$0.04 per page rather than the competitive price of \$0.02 per page. The effect of this sort of pricing is merely to convert some portion of the consumer's fixed costs (the copier payment) to variable costs (payments for paper).¹⁴⁸ But the fact that the exact same pricing scheme applies to all consumers ensures that at the margin, all consumers receive the same valuation.¹⁴⁹ Here, for example, the last copy purchased by the consumers who most value photocopies will create value of \$0.04 for the ultimate purchaser, and the last copy purchased by consumers who least value photocopies will create value of \$0.04 for the ultimate purchaser. Unlike the movie theater scenario, in which the marginal student consumer valued his seat right at \$7 and the marginal non-student adult valued hers at \$10 (and would not have obtained a seat at all, even from the student valuing the seat at only \$7, had her valuation dipped slightly below \$10), the price discrimination inherent in a metering tie-in involves no transfer of surplus from high-value to low-value buyers. Accordingly, second-degree price discrimination in the form of metering, unlike a third-degree price discrimination scheme, need not increase total output in order to enhance welfare.¹⁵⁰

Because second-degree price discrimination in the form of metering typically involves two effects—a reduction in fixed costs (a cheaper tying product) coupled

noticed, differs fundamentally from either of the preceding degrees, in that it may involve the refusal to satisfy, in one market, demands represented by demand prices in excess of some of those which, in another market, are satisfied." PIGOU, *supra* note 129, at 279.

¹⁴⁶ The term "simple" metering tie-ins excludes metering tie-ins that are accompanied by some other price discrimination scheme, such as different rates for different categories of users. For example, a printer manufacturer might not only tie its machine and its ink (a form of second-degree price discrimination) but also charge different machine and ink prices to commercial versus household consumers. The latter aspect of this arrangement constitutes third-degree price discrimination. The welfare analysis discussed in the text following this note applies to pure second-degree price discrimination.

¹⁴⁷ See Hovenkamp & Hovenkamp, *supra* note 27, at 942 n.77 (cataloguing litigated cases exhibiting the pricing pattern described).

¹⁴⁸ *Id.* at 941 ("The principal effect of tying in the printer-cartridge story (or numerous similar stories in the litigated cases) is that consumers' cost structure changes by making a larger portion of their costs variable rather than fixed.").

¹⁴⁹ *Id.* at 937-38.

¹⁵⁰ *Id.* at 938, 951-52.

with an increase in variable costs (more expensive tied complements)—it will have different welfare effects for consumers who use the tying product at different rates.¹⁵¹ Low-intensity users, those who use the tying product so little that they would not buy it at the single-product monopoly price but will do so under a tie-in that reduces the tying and increases the tied price, unambiguously benefit from metering tie-ins; any surplus they receive from purchasing the tie-in is consumer surplus that would not exist absent tying.¹⁵² Medium-intensity users, those who previously bought enough of the tied complement to justify paying the monopoly price for the tying product (so that they are not brought into the market by the tie-in) but who do not purchase so many tied units that their increased outlays on tied products exceed the price-break they enjoy on the tying product, also benefit from the tie-in; their increased expenditures on tied products are more than offset by the reduced cost of the tying product.¹⁵³ High-intensity users, those who purchase so many tied product units that their increase in outlays for the tied product exceeds the price break they enjoy on the tying product, suffer a loss of consumer surplus.¹⁵⁴ The seller, in turn, benefits from low-intensity buyers (who otherwise would make no purchases) and from high-intensity buyers (who pay more under tying than in its absence) but loses money on medium-intensity consumers, whose price break on the tying product is not offset by higher tied product expenditures.¹⁵⁵ Whether any particular metering tie-in will enhance consumer and total welfare therefore depends on the relative concentration of low-, medium-, and high-intensity users.

Importantly, second-degree price discrimination via metering may increase consumer surplus even if it does not occasion an increase in total market output. If there are few low-intensity consumers (those brought into the market by the tie-in), then an increase in the tied product price may cause medium- and high-intensity users to cut back their purchases by more than the amount of new purchases by low-intensity users. Nevertheless, consumer surplus will increase if the sum of cost-savings to medium-intensity users and surplus to new low-intensity purchasers exceeds the cost increases to high-intensity purchasers.¹⁵⁶ In other words, metering price discrimination, unlike third-degree price discrimination, may enhance consumer surplus even if total market output contracts.

Because the relative concentration of low-, medium-, and high-intensity users is difficult to determine, it is hard to assess (either before or after the fact) the consumer welfare effects of any particular instance of metering price discrimination.¹⁵⁷ There are good reasons to suppose, though, that most instances of metering enhance consumer welfare. First, as the foregoing

¹⁵¹ *Id.* at 943–52.

¹⁵² *Id.* at 944.

¹⁵³ Hovenkamp & Hovenkamp, *supra* note 27, at 944.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.* at 949–50.

¹⁵⁷ *Id.* at 950.

analysis indicates, the only context in which one would expect negative consumer welfare effects from the type of metering tie-in observed in practice (i.e., one involving a reduction in the price of the tying product and a smaller increase in the price of the tied product)¹⁵⁸ is when sales are concentrated among high-intensity consumers. When low-intensity users dominate, one would expect metering to enhance both market output and consumer welfare; when medium-intensity users dominate, one would expect a consumer welfare increase, though total market output might drop.

Moreover, all this analysis has assumed is that the tie-in occasions no other productive or allocative efficiency. In actuality, tie-ins frequently create efficiencies that ultimately benefit consumers. In terms of productive efficiencies, a tie-in may permit the seller to increase output of the tying product (as more low-intensity consumers purchase that product in response to its reduced price) and thereby achieve economies of scale.¹⁵⁹ The seller may also achieve economies of scope through joint packaging or distribution of the tying and tied products.¹⁶⁰ Some portion of any tying-induced scale or scope efficiencies will likely be passed on to consumers. In addition, consumers will frequently benefit from tying-induced allocative efficiencies. For example, when a seller with market power sells a product whose complement is also sold in a non-competitive market, both that seller and the seller of the complement are likely to charge supracompetitive prices, with each assuming competitive (or "less supracompetitive") pricing by the other. The seller may eliminate this double marginalization, enhance its own profits, and reduce consumer prices by producing the complementary product or service and tying it to its own product.¹⁶¹ In addition, metering tie-ins may make downstream markets more

¹⁵⁸ See *supra* note 58 and accompanying text.

¹⁵⁹ See *supra* note 58 and accompanying text; see also 9 AREEDA & HOVENKAMP, *supra* note 3, ¶¶ 1716–17, at 154–206.

¹⁶⁰ 9 AREEDA & HOVENKAMP, *supra* note 3, ¶¶ 1716–17, at 154–206; Hovenkamp & Hovenkamp, *supra* note 27, at 950, 965.

¹⁶¹ Hovenkamp and Hovenkamp offer the following example of a welfare-enhancing tie-in aimed at the elimination of double marginalization:

[S]uppose that most authors prefer to have both a dictionary and a thesaurus, and both are sold in an imperfectly competitive market, such as an oligopoly. A dictionary costs \$10 to make, a thesaurus costs \$8 to make, and the profit-maximizing price of a bundle is \$20. Different firms selling the two products would each try to capture the overcharge. For example, the dictionary maker might charge \$12 on the theory that the thesaurus maker would charge \$8. But the thesaurus maker would charge \$10 on the assumption that the dictionary maker would charge \$10 as well. That outcome, which would yield a package price of \$22, is suboptimal for everyone. Fewer consumers would buy and those who did would pay too much. Output for both the dictionary maker and the thesaurus maker would fall below the profit-maximizing level. In this case, consumer welfare would increase if a single firm sold both the dictionary and the thesaurus for a package price of \$20, which would also be that firm's profit-maximizing level.

competitive by making it possible for smaller (lower-intensity) buyers to enter the market.¹⁶²

The foregoing list of productive and allocative efficiencies is far from exhaustive, and an in-depth consideration of such efficiencies is beyond the scope of this Article. For present purposes, though, it will suffice to observe that tie-ins frequently create efficiencies from which consumers benefit. Because metering tie-ins appear unlikely to reduce consumer welfare *even in the absence* of such cost savings, the case for condemning them absent foreclosure effects becomes weak indeed once tying-induced efficiencies are considered.

ii. *Even if Conceived of as Third-Degree Price Discrimination, Metering Tie-Ins Typically Enhance Welfare.*

Elhauge contends that metering tie-ins are a form of third-degree price discrimination because they involve “categorizing tying product buyers into different groups (based on their number of tied product purchases) and charging each group a different effective price for the same tying product (by inflating tied product prices).”¹⁶³ For the reasons just stated, this appears to be a mischaracterization.¹⁶⁴ Nevertheless, *even if* one conceives of metering tie-ins as instances of third-degree price discrimination, they are likely welfare enhancing.

Hovenkamp & Hovenkamp, *supra* note 27, at 959. As the authors observe, some sort of tying or bundled discounting is a key part of this sort of pricing scheme, for a seller would be unlikely to sell the complement at cost absent a tie-in or other incentive to purchase both products together:

One might assume that the dictionary maker could charge \$12 for the dictionary and separately sell the thesaurus at the marginal cost price of \$8. But this result would be no better than bundling, and the seller could not be expected to do it, because some buyers would purchase its thesaurus at the competitive price and then go elsewhere for their \$12 dictionary.

Id. at 960.

¹⁶² Again, consider an example offered by Hovenkamp and Hovenkamp:

[A] gasoline refiner may contemplate franchising gasoline stations into a particular community. The cost of building a station, coupled with a reasonable return on intellectual property rights, might well amount to a million dollars, and the franchisor might have difficulty finding potential franchisees willing to make that investment. As an alternative, however, it might finance a large portion of the fixed-cost investment itself, charging the franchisees a sum sufficient to guarantee their commitment. It would then make up the rest by tying gasoline and charging a few cents more per gallon than the wholesale price. The result could be many more franchisees in the community that behave more competitively vis-à-vis one another and sell more gasoline overall.

Id. at 965.

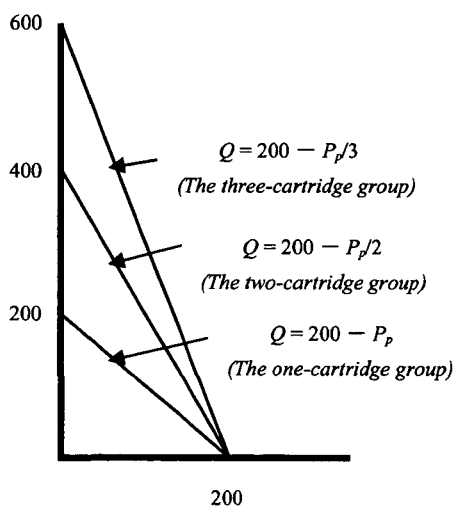
¹⁶³ Elhauge, *supra* note 9, at 431.

¹⁶⁴ See *supra* notes 129–50 and accompanying text.

To demonstrate why this is so, I first set forth Elhauge's own highly stylized example and then compare it with more realistic instances of metering tie-ins.

Elhauge's example of a metering tie-in involves a printer monopolist who faces a competitive ink cartridge market.¹⁶⁵ Printer customers can be divided into three classes based on intensity of usage: those who would, at competitive cartridge prices, use one, two, or three ink cartridges. Each of those customer groups contains 200 members, whose valuations of one cartridge's worth of printing range linearly from \$0 to \$199. To simplify the math, Elhauge assumes that printers and cartridges cost \$0 to make. With cartridges priced at the competitive price of \$0, consumers attribute the entire cost of printing to the printer itself.¹⁶⁶ Accordingly, the three groups' respective demand functions for printing (and, because cartridges are priced at \$0, for the monopolist's printer) are $200 - P_p$, $200 - P_p/2$, and $200 - P_p/3$, where P_p is the printer price.¹⁶⁷ Figure 1 represents the printer demand curves for the three groups.

Figure 1: *Demand Functions of the One-, Two-, and Three-Cartridge Groups*



Aggregating the three groups' demand functions would yield a "kinked" demand curve where $Q = 600 - (11/6)P_p$ from prices \$0 to \$200, $Q = 400 -$

¹⁶⁵ Elhauge, *supra* note 9, at 432–33.

¹⁶⁶ For example, if the printer is priced at \$300, consumers who would use three cartridges at a price of \$0 view the price of a cartridge's worth of printing as \$100; members of the two-cartridge group view the effective per-cartridge price as \$150; and members of the one-cartridge group view the per-cartridge printing price as \$300.

¹⁶⁷ For the one-cartridge group, 200 printers would be purchased at a price of \$0, and 0 printers would be purchased at a price of \$200, so (given that demand is linear among the 200 members of the group), $Q = 200 - P_p$. For the two-cartridge group, 200 printers would be purchased at a price of \$0, and 0 printers would be purchased at a price of \$400, so $Q = 200 - P_p/2$. For the three-cartridge group, 200 printers would be purchased at a price of \$0, and 0 printers would be purchased at a price of \$600, so $Q = P_p/3$.

$(5/6)P_p$ from prices \$201 to \$400, and $Q = 200 - P_p/3$ from prices \$401 to \$600.¹⁶⁸ Given that demand function, if the cost of producing a printer is \$0, the monopolist's profit-maximizing uniform printer price would be \$163.64.¹⁶⁹ At that price, printer output would be 300,¹⁷⁰ cartridge output would be 709,¹⁷¹ profits would be \$49,090,¹⁷² total consumer surplus would be \$46,362,¹⁷³ and total welfare would be \$95,452.¹⁷⁴ Figure 2 illustrates the

¹⁶⁸ Members of the one-cartridge group reduce their printer purchases to zero when the printer price reaches \$200. Members of the two-cartridge group will continue to make purchases until the printer price reaches near \$400 but will make no purchases beyond that point. Purchases among members of the three-cartridge group will continue as price exceeds \$400, but no purchases will occur above \$600. Accordingly, from prices of \$400 to \$600, the demand function is simply that of the three-cartridge group, $Q = 200 - P_p/3$. From prices of \$200 to \$400, the two-cartridge group's demand function ($200 - P_p/2$) must be added in, so $Q = 400 - 5/6(P_p)$. From prices of \$0 to \$200, the one-cartridge group's demand function ($200 - P_p$) must be added in, so $Q = 600 - 11/6(P_p)$.

Elhauge suggests the aggregate demand curve would be linear. Elhauge, *supra* note 9, at 432 ("[W]e can add the three groups' demand functions to get aggregate printer demand of $600 - (11/6)P_p$."). That is incorrect. For price ranges in which the quantity demanded by a group would fall to zero (e.g., $P_p > \$400$ for the two-cartridge group, $P_p > \$200$ for the one-cartridge group), that group's demand function cannot be added in.

¹⁶⁹ With zero costs, a seller's profits will equal $Q * P$. Thus, for any demand function $Q = A - BP$, profits will equal $(A - BP)(P)$, or $AP - BP^2$. Taking the derivative shows that these profits are maximized when $P = A/2B$. With a "kinked" demand curve, the profit-maximizing price will be the price that would maximize profits on one of the linear functions. That means that for the kinked aggregate demand curve in Elhauge's printer hypothetical, the candidates for profit-maximizing price would be \$300 (the profit-maximizing price (P_m) for the demand function $Q = 200 - P_p/3$), \$240 (P_m for the demand function $Q = 400 - 5/6(P_p)$), or \$163.64 (P_m for the demand function $Q = 600 - 11/6(P_p)$). At a price of \$300, members of the one-cartridge group (whose demand function is $200 - P_p$) would purchase 0 printers; members of the two-cartridge group (whose demand function is $200 - P_p/2$) would purchase 50 printers; and members of the three-cartridge group (whose demand function is $200 - P_p/3$) would purchase 100 printers. Total profits would be \$45,000 ($\$300 * 150$). At a price of \$240, members of the one-, two-, and three-cartridge groups would purchase 0, 80, and 120 printers, respectively, so profits would equal \$48,000. At a price of \$163.64, members of the one-, two-, and three-cartridge groups would purchase 36 (36.36), 118 (118.18), and 145 (145.45) printers, respectively, so profits would equal \$48,928.36 (or \$49,090.36, if fractional purchases were possible). Thus, \$163.64 is the profit-maximizing price for this aggregate demand function.

¹⁷⁰ Printer output is derived by plugging the printer price into each group's demand function. At the profit-maximizing uniform price, the one-, two-, and three-cartridge groups would purchase 36.36, 118.18, and 145.45 printers, respectively. See *supra* note 169. Total printer purchases would equal 299.99.

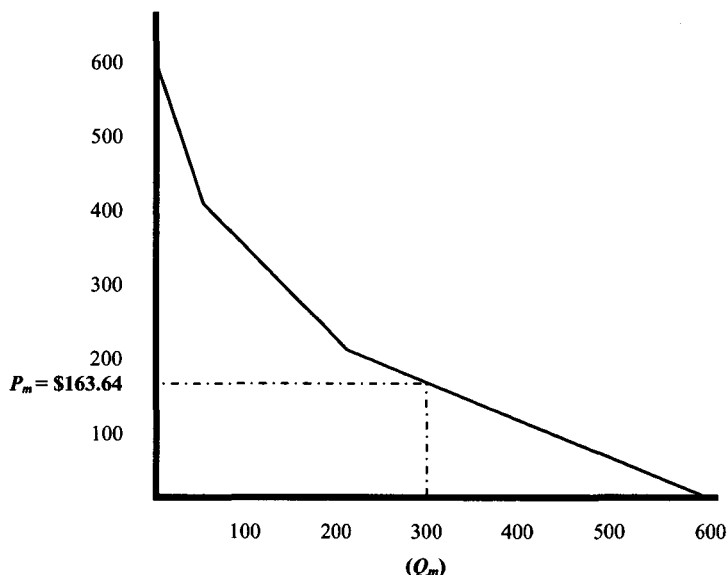
¹⁷¹ Cartridge output is derived by multiplying the number of each group's printers by the number of cartridges members will consume per printer. The one-cartridge group would purchase 36.36 cartridges ($36.36 * 1$); the two-cartridge group, 236.36 ($118.18 * 2$); the three-cartridge group, 436.35 ($145.45 * 3$). Total cartridge purchases would equal 709.07.

¹⁷² The seller would earn revenue of \$49,090.36 ($299.99 * \163.64). Given the zero-cost assumption, all this revenue is profit for the seller.

¹⁷³ On a demand curve, consumer surplus is graphically represented by the area above the price charged and below the demand curve. For example, for the one-cartridge group,

aggregate demand curve of the three groups and notes output and price when printer cost is \$0 and the printer monopolist engages in uniform (nondiscriminatory) pricing.

Figure 2: *Aggregate Demand for Monopolist's Printer; Output and Surplus with Uniform Pricing*



Elhaug then compares what would happen if the printer monopolist were to engage in metering price discrimination. In that case, the monopolist would determine the profit-maximizing price for each consumer group and would seek to charge each group that price. It would thus seek to charge one-

whose demand function $Q = 200 - P_p$ extends linearly from 200 on the y axis to 200 on the x axis, see *supra* Figure 1, consumer surplus would be represented by a right triangle whose height is 36.36 (the difference between the profit-maximizing price of \$163.64 and \$200, the "choke" price at which purchases would fall to zero) and whose base is also 36.36 (representing quantity demanded at the profit-maximizing price). Because the area of a right triangle is one-half the base times the height, consumer surplus for the one-cartridge group totals \$661.02. For the two-cartridge group, the height of the consumer surplus triangle is 236.36 (representing the difference between the "choke" price of \$400 and the profit-maximizing price of \$163.64) and the base is 118.18 (quantity demanded at the profit-maximizing price), generating consumer surplus of \$13,966.51. Consumer surplus for the three-cartridge group is $(436.46 * 145.45)/2$, or \$31,734.28. Summing the consumer surplus for the three groups yields the total consumer surplus at the profit-maximizing price, \$46,361.81.

¹⁷⁴ Total welfare is the sum of producer and consumer surplus: \$49,090 + \$46,362 = \$95,452.

cartridge buyers \$100,¹⁷⁵ two-cartridge buyers \$200,¹⁷⁶ and three-cartridge buyers \$300.¹⁷⁷ It could implement this scheme by charging \$0 for the printer but requiring printer buyers to purchase ink cartridges from it at a supracompetitive price of \$100 per cartridge. If it imposed this scheme (which would result in effective prices of \$100, \$200, and \$300 for members of the one-, two-, and three-cartridge groups, respectively), it would still sell 300 printers,¹⁷⁸ but cartridge purchases would drop to 600.¹⁷⁹ The seller's profits would rise by 22% to \$60,000.00,¹⁸⁰ consumer surplus would fall 35% to \$30,000.00,¹⁸¹ and total welfare would fall almost 6% to \$90,000.00. As Elhauge explains,

The reason for this decline in ex post total welfare (and cartridge output) is that, although total printer output has remained constant, tying-induced price discrimination reallocates some printer output from buyers who value printers from \$163.64 to \$300 (and use 2–3 cartridges) to buyers who value printers from \$100 to \$163.64 (and use 1 cartridge).¹⁸²

But the total welfare reduction Elhauge highlights depends on there being no change in total printer output. If the printer monopolist's price discrimination generated greater printer output by expanding sales to lower-valuation consumers who would not purchase the product at the uniform monopoly price, and if the welfare gains among those new customers exceeded the welfare losses by high-valuation customers who cut back on purchases in response to higher effective prices, then the price discrimination scheme would enhance total welfare. Such output and welfare enhancement would occur if the monopolist's price discrimination scheme employed a more refined metering device that segregated the customer base into a larger number of groups.

¹⁷⁵ With zero costs, profits are maximized for any demand function $Q = A - BP$ when $P = A/2B$. See *supra* note 169. Thus, if the demand function is $Q = 200 - P_p$, then the profit-maximizing price is \$100.

¹⁷⁶ When $Q = 200 - P_p/2$, the profit-maximizing price is \$200.

¹⁷⁷ When $Q = 200 - P_p/3$, the profit-maximizing price is \$300.

¹⁷⁸ Facing an effective price of \$100, members of the one-cartridge group ($Q = 200 - P_p$) would buy 100 printers. Facing an effective price of \$200, members of the two-cartridge group ($Q = 200 - P_p/2$) would buy 100 printers. Facing an effective price of \$300, members of the three-cartridge group ($Q = 200 - P_p/3$) would buy 100 printers.

¹⁷⁹ For their 100 printers, one-cartridge group members would purchase 100 cartridges; members of the two-cartridge group, 200; and members of the three-cartridge group, 300.

¹⁸⁰ 600 cartridges * \$100 per cartridge – \$0 costs.

¹⁸¹ For the one-cartridge group, consumer welfare = $(100 * \$100)/2 = \$5,000$. For the two-cartridge group, consumer welfare = $(200 * \$100)/2 = \$10,000$. For the three-cartridge group, consumer welfare = $(300 * \$100)/2 = \$15,000$. Thus, total consumer welfare is \$30,000. For an explanation of how consumer surplus is derived, see *supra* note 173.

¹⁸² Elhauge, *supra* note 9, at 433.

Consider, for example, what would happen if demand among purchasers was such that the printer monopolist's customer base divided more readily into four, rather than three, groups. The monopolist would then have an incentive to employ a more refined meter. For example, if each printer cartridge in Elhauge's original example printed 4,000 pages and the three consumer groups purchased from one to three cartridges at competitive prices, the monopolist in this revised example might reduce the size of its printer cartridge by 25% to a 3,000-page capacity. Whereas the 600 consumers in Elhauge's example could opt to purchase the ability to print either 1 to 4,000; 4,001 to 8,000; or 8,001 to 12,000 pages, the consumers in this revised example could purchase printing capacity of either 1 to 3,000; 3,001 to 6,000; 6,001 to 9,000; or 9,001 to 12,000 pages. Assuming that usage rates at competitive prices are distributed linearly and that, as in Elhauge's example, the reservation prices for one cartridge's worth of printing also vary in a linear fashion, reducing the size of the printer cartridge by 25% would transform Elhauge's three 200-member groups of consumers into four 150-member groups, who would, at competitive prices for ink cartridges (\$0), consume one to four cartridges and would value one cartridge's worth of printing from \$0 to \$149. At competitive ink prices, the printer demand functions for the one-cartridge to four-cartridge groups would be, respectively: $150 - P_p$, $150 - P_p/2$, $150 - P_p/3$, and $150 - P_p/4$.¹⁸³ This would generate a kinked, but "smoother," aggregate demand curve where $Q = 600 - (25/12)P_p$ from prices \$0 to \$150, $Q = 450 - (13/12)P_p$ from prices \$151 to \$300, $Q = 300 - (7/12)P_p$ from prices \$301 to \$450, and $Q = 150 - (1/4)P_p$ from prices \$451 to \$600.¹⁸⁴

Assuming printers cost nothing to produce, the uniform profit-maximizing price for the printer monopolist would be \$207.69.¹⁸⁵ At that price, the monopolist would sell 225 printers and 727 cartridges.¹⁸⁶ His profits would be

¹⁸³ Cf. *supra* note 167 and accompanying text.

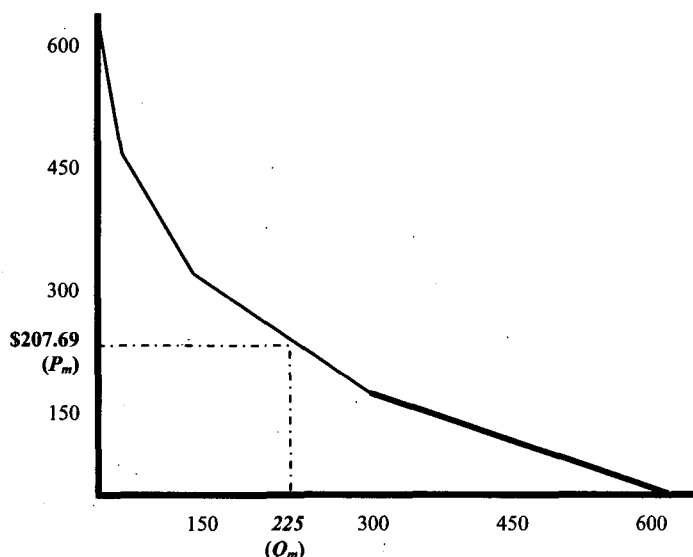
¹⁸⁴ Cf. *supra* note 168 and accompanying text.

¹⁸⁵ Cf. *supra* note 169 and accompanying text. With this kinked aggregate demand curve, the candidates for profit-maximizing uniform price would be \$144 (P_m where $Q = 600 - (25/12)P_p$); \$207.69 (P_m where $Q = 450 - (13/12)P_p$); \$257.14 (P_m where $Q = 300 - (7/12)P_p$); and \$300 (P_m where $Q = 150 - (1/4)P_p$). Slotting these prices into the demand functions for the four groups of buyers (i.e., $Q = 150 - P_p$; $Q = 150 - P_p/2$; $Q = 150 - P_p/3$; and $Q = 150 - P_p/4$) reveals that at a price of \$144, the seller would sell 300 printers for total profits of \$43,200; at a price of \$207.69, he would sell 225 printers for profits of \$46,730.77; at a price of \$257.14, he would sell 171.44 printers for profits of \$44,082.80; and at a price of \$300, he would sell 125 printers for profits of \$37,500. Thus, the seller's profits would be maximized at a uniform price of \$207.69.

¹⁸⁶ At a price of \$207.69, members of the one-cartridge group ($Q = 150 - P_p$) would buy 0 printers and 0 cartridges. Members of the two-cartridge group ($Q = 150 - P_p/2$) would buy 46.16 printers and 92.31 cartridges. Members of the three-cartridge group ($Q = 150 - P_p/3$) would buy 80.77 printers and 242.31 cartridges. And members of the four-cartridge group ($Q = 150 - P_p/4$) would buy 98.08 printers and 392.32 cartridges.

\$46,730,¹⁸⁷ and consumer surplus would total \$31,155,¹⁸⁸ generating total welfare of \$77,885.¹⁸⁹ Notably, the consumers whose demand is reflected in the most elastic portion of the demand curve (i.e., the bold segment farthest to the right) would purchase zero printers. See Figure 3.

Figure 3: *Output and Price with Four Buyer Groups and Uniform Pricing*



Now suppose the monopolist were to engage in the sort of metering price discrimination utilized in Elhauge's hypothetical. He would seek to charge each group its profit-maximizing price, which would be \$75 for the one-cartridge group, \$150 for the two-cartridge group, \$225 for the three-cartridge group, and \$300 for the four-cartridge group.¹⁹⁰ The monopolist could achieve such price

¹⁸⁷ The seller's revenues would total $225 * \$207.69 = \$46,730$. Assuming zero costs, this is all profit.

¹⁸⁸ Total consumer surplus is derived by summing the consumer surplus enjoyed by each of the buyer groups, and each group's consumer surplus equals $1/2(\text{choke price} - P_m)(\text{number of units purchased at } P_m)$. See *supra* note 173. The one-cartridge group would purchase no printers and would thus capture no surplus. The two-cartridge group would purchase 46.16 printers at P_m , and the difference between that group's choke price (\$300) and P_m (\$207.69) equals \$92.31, so that group's consumer surplus would be \$2,130.51. The three-cartridge group would purchase 80.77 printers at P_m , and the difference between that group's choke price (\$450) and P_m is \$242.31, so consumer surplus would be \$9,785.69. The four-cartridge group would purchase 98.08 printers at P_m , and the difference between that group's choke price (\$600) and P_m is \$392.31, so consumer surplus would be \$19,238.88. Total consumer surplus would therefore be \$31,155.08.

¹⁸⁹ $\$46,730$ (producer surplus) + $\$31,155$ (consumer surplus) = $\$77,885$ (total welfare).

¹⁹⁰ With zero costs, the profit-maximizing price for any demand function $Q = A - BP$ will be $A/2B$. See *supra* note 169. Thus, for the functions $Q = 150 - P_p$ (the demand function for the one-cartridge group), $Q = 150 - P_p/2$ (two-cartridge group), $Q = 150 - P_p/3$ (three-

discrimination by charging \$0 for the printer but tying in cartridges at the supracompetitive price of \$75 per cartridge. Under this pricing scheme, the monopolist would sell 300 printers¹⁹¹ and 750 cartridges,¹⁹² generating profits of \$56,250,¹⁹³ consumer surplus of \$28,125,¹⁹⁴ and total welfare of \$84,375.¹⁹⁵ Thus, tying-induced price discrimination using a more refined meter would decrease static consumer surplus by 9.8% but would increase printer output by 33.3%, cartridge output by 3.2%, and total surplus by 8.3%.¹⁹⁶

As the monopolist utilizes a more refined meter that divides the customer base into a greater number of groups (i.e., as it "shrinks" the size of tied units so as to increase the difference in the number of tied units purchased by high-versus low-value purchasers), it will eventually hit a point at which its tying-induced price discrimination will consistently generate greater total welfare than charging a uniform monopoly price for the tying product.¹⁹⁷ Moreover, the

cartridge group), and $Q = 150 - P_p/4$ (four-cartridge group), the profit-maximizing prices would be \$75, \$150, \$225, and \$300, respectively.

¹⁹¹ Cf. *supra* note 178 and accompanying text. Facing an effective price of \$75, the one-cartridge group ($Q = 150 - P_p$) would purchase 75 printers. Facing an effective price of \$150, the two-cartridge group ($Q = 150 - P_p/2$) would purchase 75 printers. Facing an effective price of \$225, the three-cartridge group ($Q = 150 - P_p/3$) would purchase 75 printers. Facing an effective price of \$300, the four-cartridge group ($Q = 150 - P_p/4$) would purchase 75 printers.

¹⁹² The one-, two-, three-, and four-cartridge groups, each of which would purchase 75 printers, would purchase 75, 150, 225, and 300 cartridges, respectively.

¹⁹³ $750 * \$75 = \$56,250$.

¹⁹⁴ Total consumer surplus is derived by summing the consumer surplus enjoyed by each of the buyer groups, and each group's consumer surplus equals $1/2(\text{choke price} - P_m)(\text{number of units purchased at } P_m)$. See *supra* notes 173, 188. The one-cartridge group would enjoy surplus of $1/2(\$75)(75) = \$2,812.50$. The two-cartridge group would enjoy surplus of $1/2(\$150)(75) = \$5,625$. The three-cartridge group would enjoy surplus of $1/2(\$225)(75) = \$8,437.50$. The four-cartridge group would enjoy surplus of $1/2(\$300)(75) = \$11,250$. Summing each group's consumer surplus generates total consumer surplus of \$28,125.

¹⁹⁵ $\$56,250$ (producer surplus) + $\$28,125$ (consumer surplus) = $\$84,375$ (total welfare).

¹⁹⁶ While static consumer surplus would fall from \$31,155 to \$28,125, printer output would rise from 225 to 300, cartridge output from 727 to 750, and total surplus from \$77,885 to \$84,375.

¹⁹⁷ As Klein and Wiley explain:

The essential economic determinant of how closely a manufacturer using an aftermarket metering arrangement can approximate the output increases of perfect price discrimination is the accuracy of the meter in measuring intensity of package demand above the non-discriminating price. If the meter is highly accurate in this regard, the price increase to high-intensity users will not result in the loss of many sales to high-intensity users. The meter will merely increase the package price across high-intensity users in a way that collects varying levels of consumer surplus. On the other hand, sales to low-intensity users that face a lower package price will expand.

meter need not be all that highly refined. As Elhauge explains with respect to his hypothetical tie-in of printers and cartridges:

Assuming equally sized groups with linear per-cartridge valuations that have the same range for each cartridge, . . . intraproduct price discrimination produced by tying increases printer output when the number of tied units is 4 or higher. . . . Tying-induced price discrimination lowers ex post total welfare for 2 or 3 tied units, but increases it for 4 or more units.¹⁹⁸

This is a significant concession that undermines Elhauge's claim that metering tie-ins generally have negative static (ex post) total welfare effects. In actual practice, one rarely observes a metering tie-in that effectively divides consumers into only a small number of groups. In most tie-ins involving variable proportions of complements,¹⁹⁹ the tied product is sold in small units so that there is a large divergence between the volume of tied product purchases by high-value and low-value consumers. Reported cases featuring tie-ins apparently aimed at metering, for example, have involved punch cards (the tied product) tied to calculating machines (the tying product),²⁰⁰ restaurant supplies tied to a restaurateur's trademarks,²⁰¹ salt purchases tied to the lease of a machine that turns salt into brine,²⁰² equipment service tied to the lease or sale of capital equipment like copy machines,²⁰³ and ink tied to mimeograph machines and printers.²⁰⁴ In all these cases, purchasers or lessees of the tying product would vary significantly in the amount of the tied product they purchased, so the monopolist would have effectively divided the consumer base into a great many "groups." Thus, real-life metering tie-ins tend to employ the sort of highly refined meters that consistently enhance total welfare.²⁰⁵ This

Klein & Wiley, *supra* note 31, at 613; *see also id.* at 613 n.29 ("The key economic factors common to all forms of price discrimination are the number of implicit prices and how precise prices are across sales relative to consumer value.").

¹⁹⁸ Elhauge, *supra* note 9, at 433; *see also id.* at 481 (showing that total welfare change occasioned by moving from uniform monopoly pricing to metering price discrimination is positive after cartridge size is reduced so that consumers are divided into at least four groups).

¹⁹⁹ If the tie-in involves only one tied-product complement (or a fixed ratio of such complements) per tying product, the tie-in cannot occasion any of the so-called power effects. Elhauge concedes that such tie-ins could cause no anticompetitive harm and should be legal. *See id.* at 443 (observing that power effects are impossible if the tying and tied products lack separate utility and are used or bundled in a fixed ratio).

²⁰⁰ *See Int'l Bus. Mach. Corp. v. United States*, 298 U.S. 131 (1936).

²⁰¹ *See, e.g., Siegel v. Chicken Delight, Inc.*, 448 F.2d 43 (9th Cir. 1971).

²⁰² *See Int'l Salt Co., Inc. v. United States*, 332 U.S. 392 (1947).

²⁰³ *See, e.g., Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992).

²⁰⁴ *See, e.g., Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006).

²⁰⁵ For other analyses that dispute Elhauge's conclusion concerning the static welfare effects of metering tie-ins, *see Hovenkamp & Hovenkamp, supra* note 27; Barry Nalebuff, *Price Discrimination and Welfare*, COMPETITION POL'Y INT'L, Autumn 2009, at 221. For

should come as no surprise, for the monopolist can maximize the profitability of its metering tie-in by selecting a meter that closely approximates consumers' reservation prices (so as to extract as much consumer surplus as possible) and, accordingly, makes relatively fine distinctions among consumers.

b. Stigler-Type Price Discrimination

Elhauge's discussion of the static welfare effects of tying-induced price discrimination focuses almost entirely on metering tie-ins, which involve tying a supracompetitively priced complement to the tying product. Elhauge quickly disposes of Stigler-type tie-ins of noncomplementary products that do not exhibit a strong positive demand correlation²⁰⁶ by observing that such tie-ins invariably reduce consumer welfare and that their "ex post total welfare effects are mixed, with tying decreasing ex post total welfare unless allocation inefficiencies are offset by output-increasing efficiencies."²⁰⁷

Elhauge's "unless" is significant, for the Stigler-type tie-ins generally observed in actual practice *do* involve significant output-increasing efficiencies that likely offset any allocation inefficiencies. Stigler-type tie-ins are most likely to be profitable where the marginal cost of each of the tied-together products (over all of which the seller must have some market power) is low relative to consumer valuations; otherwise, the effective discounts offered to lower-value (high-elasticity) consumers may result in marginal revenues less than cost.²⁰⁸ Accordingly, as with Stigler's initial example involving the *Loew's* case (which involved the tying together of motion picture exhibition rights),²⁰⁹ most actual tie-ins aimed at eliminating the pricing constraints imposed by high-elasticity buyers involve products with a low marginal cost of production and, quite frequently, a high intellectual property component.

Work by economists Yannis Bakos and Erik Brynjolfsson demonstrates how Stigler-type tying (or bundling, as it is more commonly termed) is frequently an efficient pricing design for goods with a negligible marginal cost—precisely the sorts of goods typically involved in such tie-ins.²¹⁰ Specifically, Bakos and Brynjolfsson show how sellers of "information goods" (generally defined as "anything that can be digitized," such as a movie, song,

Elhauge's response to Nalebuff's analysis, see Einer Elhauge, *The Failed Resurrection of the Single Monopoly Profit Theory*, COMPETITION POL'Y INT'L, 155, Spring 2010, at 186–92.

²⁰⁶ See *supra* Part II.A.2.

²⁰⁷ Elhauge, *supra* note 9, at 434–35.

²⁰⁸ See Stan J. Liebowitz & Stephen E. Margolis, *Bundles of Joy: The Ubiquity and Efficiency of Bundles in New Technology Markets*, 5 J. COMPETITION L. & ECON. 1, 18 (2009).

²⁰⁹ See Stigler, *supra* note 44 (discussing *United States v. Loew's, Inc.*, 371 U.S. 38 (1962)).

²¹⁰ Yannis Bakos & Eric Brynjolfsson, *Bundling Information Goods: Pricing, Profits, and Efficiency*, 45 MGMT. SCI. 1613 (1999).

book, or computer program²¹¹) can both extract additional consumer surplus and overcome price-setting difficulties by bundling the goods they sell. Such surplus extraction can then help overcome a difficulty that otherwise may lead to an underproduction of nonrivalrous and other low-marginal cost goods.

Whenever there is a lack of perfect competition for a seller's good (so that above-cost pricing is possible) and consumers vary substantially in their reservation prices for the good, the seller will have a difficult time determining its profit-maximizing price. Setting the price too low will leave money on the table from high-value consumers. Setting the price too high will preclude sales to those consumers, possibly great in number, who would be willing to pay a lower, but still above-cost, price. In such circumstances, Bakos and Brynjolfsson demonstrated, Stigler-type bundling can be quite useful to multiproduct sellers.²¹² If consumers demand either one or zero units of each of a seller's goods and consumers' reservation prices for the goods are bounded and independent, the law of large numbers assures that the variance of consumers' average valuations of the components in a bundle will shrink as the number of components in the bundle grows.²¹³ This then implies that, as the bundle grows, the variation of consumers' valuations of the bundle as a whole will shrink in proportion to the bundle's total value. Eventually, the seller will confront demand that is highly elastic around the median value for the bundle but inelastic away from that value.²¹⁴ Thus, when the marginal cost for each of the components in a bundle is negligible, the seller can maximize its profits by tying many such goods together to "bunch" reservation prices and then setting its price for the bundle just below the point at which reservation prices tend to bunch. If it does so, most potential consumers will purchase the bundle.²¹⁵

²¹¹ See CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 3 (1999).

²¹² Bakos & Brynjolfsson, *supra* note 210, at 1613–14 (discussing utility to sellers of the "predictive value of bundling").

²¹³ *Id.* at 1616 ("[A]s the number of information goods in the bundle increases, the law of large numbers assures that the distribution for the valuation of the bundle has an increasing fraction of consumers with 'moderate' valuations near the mean of the underlying distribution.").

²¹⁴ *Id.* ("Since the demand curve is derived from the cumulative distribution function for consumer valuations, it becomes more elastic near the mean, and less elastic away from the mean . . .").

²¹⁵ Bakos and Brynjolfsson summarize their basic insight as follows:

A strategy of selling a bundle of many distinct information goods for a single price often yields higher profits and greater efficiency than selling the same goods separately. The bundling strategy takes advantage of the law of large numbers to "average out" unusually high and low valuations, and can therefore result in a demand curve that is more elastic near the mean valuation of the population and more inelastic away from the mean. As a result of this predictive value of bundling, profits and sales can be increased, even as inefficiency (deadweight loss) is reduced.

Id. at 1627.

In addition to helping the seller enhance its profits and extract additional consumer surplus, such a pricing strategy is likely to enhance total welfare by overcoming a problem plaguing sellers of nonrivalrous goods²¹⁶ and other goods with significant fixed, but extremely low marginal costs of production.²¹⁷ For such goods, the cost of supplying an additional user is negligible, so that charging a nonnegligible (or, in the case of goods with zero marginal cost, a positive) price for using the good is inefficient. The excessive price will dissuade use by consumers who attach an above-cost, but below-price, value to the good and will thus squander potential surpluses.²¹⁸ At the same time, if the product at issue were priced at marginal cost, the seller would not be able to recoup its total costs of providing the good.²¹⁹ What is needed, then, is a pricing mechanism that permits use by all consumers attaching an above-cost value to the good but still provides the seller with enough revenue to cover the total cost of producing the good.

Stigler-type bundling of the sort envisioned by Bakos and Brynjolfsson can assist here. When the value of the individual elements in a bundle are uncorrelated, the proportion of potential users that are willing to pay the bundled price charged by the seller will expand as the number of bundled elements grows. As long as an individual's willingness to pay for the desired elements within the bundle exceeds the bundle's price, the individual will view additional, undesired elements as having a marginal price of zero. Bundling may therefore offer an imperfect solution to the difficulty afflicting sellers of nonrivalrous and other low-marginal cost goods: It may enable the seller to cover the cost of creating such goods while confronting buyers with a zero marginal cost for any particular element of the bundle.²²⁰

It is difficult to conceive of real-world instances of Stigler-type tie-ins that are not somehow alleviating the pricing dilemma affecting sellers of nonrivalrous and other negligible-marginal cost goods. By contrast, examples of

²¹⁶ A nonrivalrous good is one that can be consumed by one consumer without preventing simultaneous consumption by others. Information goods are nonrivalrous.

²¹⁷ See Liebowitz & Margolis, *supra* note 208, at 16.

²¹⁸ *Id.* at 19.

²¹⁹ *Id.*

²²⁰ *Id.* As Liebowitz and Margolis explain, the solution is imperfect for at least two reasons: (1) even under this outcome, "consumers are confronted with a positive price for the bundle, and some consumers will elect to forego the bundle even though [the] marginal cost of providing it (zero) is less than the consumer's willingness to pay," *id.*; (2) the bundling strategy "does not solve the standard problem of determining which goods to produce. A bundle seller is not confronted with data on consumers' willingness to pay for individual items in the bundle, only the willingness to pay for the whole thing." *Id.* With respect to this latter difficulty, though, there are some mitigating factors. As Liebowitz and Margolis note, depending on the nature of the bundle, sellers may be able to observe which elements are most popular (e.g., cable operators can tell which channels are being watched most heavily). *Id.* at 19–20. Moreover, "markets in which bundled public goods are sold are not necessarily monopolies." *Id.* at 20. Competition among bundles can provide information about which components are most valued.

Stigler-type bundles that do help solve this pricing dilemma, and thereby facilitate output, abound throughout the economy. Everyday examples include music CDs that tie together multiple tracks, cable television packages that tie numerous stations, computer programs that bundle disparate software programs, news sources (print and electronic) that bundle all sorts of informational components, etc. With all of these output-enhancing bundles, the potential for a tying lawsuit lurks. If a consumer prefers one of the items in the bundle but not the other(s), if the preferred item is not available separately and is one over which the seller has market power, and if the tie-in affects a not insubstantial proportion of commerce in the tied product market, then the seller has a facially plausible claim.²²¹ Elhauge might argue that such claims would fail because the monopolist could assert an efficiencies defense.²²² But, as Part III.B.3 explains, the efficiencies defense to which Elhauge points is not nearly as broad as he suggests.²²³

2. *Competition and Dynamic Efficiency Are Enhanced by Permitting Monopolists to Extract Additional Surplus via Tying.*

The preceding analysis, like the bulk of Elhauge's consideration of tying's nonforeclosure effects, focuses on static welfare effects—those resulting from the seller's sales and pricing strategy if we assume that its ability to enhance its profits by engaging in tying is fixed. (Elhauge refers to these effects as *ex post* effects because they occur *after* the seller has attained the market power that permits it to enhance its profits by tying.)²²⁴ If we relax this assumption to account for the possibility that a seller may influence its ability to gain the market power needed to implement profit-enhancing tying, then the efficiencies that result from permitting tie-ins that do not cause substantial market foreclosure are even greater. Thus, consideration of dynamic efficiencies (which Elhauge refers to as *ex ante* efficiencies, since they involve conduct occurring both before and after the seller's attainment of market power²²⁵) further

²²¹ Indeed, such a lawsuit has been filed against cable companies that engage in Stigler-type bundling. See Jessica Dickler, *Changing the Channel on Cable Costs*, CNNMONEY (Oct. 4, 2007, 12:31 PM), http://money.cnn.com/2007/10/03/pf/raw_deal_cable/index.htm. The United States Court of Appeals for the Ninth Circuit recently affirmed dismissal of this lawsuit. See *Brantley v. NBC Universal, Inc.*, 649 F.3d 1078, 1081 (9th Cir. 2011), *withdrawn*, 2011 WL 5122495 (9th Cir. Oct. 31, 2011). The Ninth Circuit's reasoning conflicts with Elhauge's contention that Stigler-type tying involves "anticompetitive" price discrimination. See Thom Lambert, *Ninth Circuit Moves Tying Doctrine in the Right Direction: Will SCOTUS Follow?*, TRUTH ON THE MARKET WEBLOG (June 7, 2011, 8:26 AM), <http://truthonthemarket.com/2011/06/07/ninth-circuit-moves-tying-doctrine-in-the-right-direction-will-scotus-follow/>.

²²² See *supra* note 126 and accompanying text.

²²³ See *infra* Part III.B.3.

²²⁴ See Elhauge, *supra* note 9, at 426 (observing that analysis of *ex post* welfare effects "ignor[es] any *ex ante* effects on efforts to obtain market power").

²²⁵ See *id.*

weakens the case for policing tying's nonforeclosure effects under the antitrust laws.²²⁶

Despite the fact that monopoly pricing redistributes wealth from consumers to producers and reduces static efficiency by creating deadweight loss,²²⁷ American antitrust law has long permitted monopolists to engage in monopoly pricing.²²⁸ That is because, in the words of the U.S. Supreme Court, "The opportunity to charge monopoly prices—at least for a short period—is what attracts 'business acumen' in the first place; it induces risk taking that produces innovation and economic growth."²²⁹ The prospect of monopoly pricing has this innovation-inducing effect because it spurs business competition by raising the reward for developing a unique product or service for which substitutes are limited.

To illustrate why the freedom to charge monopoly prices is, in the Court's words, "an important element of the free-market system,"²³⁰ economists Dennis Carlton and Ken Heyer posed a hypothetical involving a business, Firm *A*, that must decide whether to pursue a risky software venture that could fail, costing the firm its \$5 million investment, or could succeed, generating profits of \$50 million.²³¹ Suppose that the managers of the business, after much investigation and debate, decide that the risky gamble is just barely worth taking. Fortunately enough, the gamble pays off, and Firm *A* begins to earn large profits (heading toward the expected \$50 million payout) by charging high prices for its unique and highly valued new product. The local competition authority, upon learning that Firm *A* is earning a rate of return several times higher than that earned by similar firms, decides to cap the firm's prices at a rate that will produce a 100 percent rate of return (\$10 million) on the initial \$5 million investment. Insisting that such a rate of return is plenty high to preserve incentives for future innovation, the authority observes that its price cap will lower prices for consumers, reduce deadweight loss, enhance static efficiency significantly, and move output closer to the competitive level.

While Firm *A*'s unregulated monopoly returns (ten times the amount invested) would indeed seem exorbitant, it is important to remember that at the

²²⁶ Professor Steven Semeraro articulated a version of this argument in a brief response included in the *Forum* publication that accompanied Elhauge's article. See Steven Semeraro, *Should Antitrust Condemn Tying Arrangements that Increase Price Without Restraining Competition?*, 123 HARV. L. REV. F. 30, 30 (2009) ("[G]ranting firms with market power broad leeway to exploit that power actually benefits consumers over time so long as competing firms are not restrained.").

²²⁷ See SULLIVAN ET AL., *supra* note 24, at 46–47.

²²⁸ Carlton & Heyer, *supra* note 20, at 1 ("[S]imple monopoly pricing . . . is legal *per se* under [United States] antitrust law."). Some foreign jurisdictions are not as lenient. See *id.* at 3 ("[T]he European Commission can attack excessive pricing as 'exploitive' under its competition laws, though such attacks have been rare.").

²²⁹ *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004).

²³⁰ *Id.*

²³¹ Carlton & Heyer, *supra* note 20, at 3–4.

time of investment, Firm *A* contemplated such a high payoff for success and was still just barely willing to pursue the high-risk venture. Had it known that antitrust regulators might rein in its monopoly pricing, it would not have pursued the venture in the first place, and both it and the consumers who chose to buy its unique product would have been deprived of significant wealth.²³² Perhaps more importantly, other businesses that currently or in the future find themselves in Firm *A*'s position would forego similar investments, squandering potential surpluses.²³³

The well-accepted intuition this example generates—that monopoly pricing facilitates dynamic efficiencies and should thus be permitted—similarly supports the liberalization of tying-induced price discrimination. By allowing the entrepreneur to capture more of the surplus her innovation creates (represented graphically by the area between her marginal cost curve and the demand curve for her product or service), tying-induced price discrimination encourages innovation by increasing the reward for developing a unique product or service for which consumers are willing to pay above-cost prices.²³⁴ Innovation, a central determinant of economic growth, tends to be retarded by the fact that innovators generally capture only a fraction of the surplus their efforts produce.²³⁵ Tying-induced price discrimination helps alleviate this wealth-reducing positive externality. Moreover, unlike simple monopoly pricing, which always reduces output to subcompetitive levels and creates a static deadweight loss, tying-induced price discrimination tends to enhance output and reduce the deadweight loss that would exist under simple monopoly pricing.²³⁶ Thus, the case for permitting tying-induced price discrimination on dynamic efficiency grounds is even stronger than the analogous—and well-accepted—dynamic efficiency case for permitting simple monopoly pricing.²³⁷

²³² *Id.* at 4.

²³³ *Id.*

²³⁴ See Klein & Wiley, *supra* note 31, at 619 (“[P]rice discrimination allows producers to recoup more of the social value of their innovations and thereby leads to more innovation.”); Semeraro, *supra* note 226, at 30 (“[T]he opportunity to charge [effectively higher prices via price discrimination] encourages rival firms to invest in innovative activities that are essential to a vibrant economy.”).

²³⁵ As Jonathan Baker has explained, “From one generation to the next, innovation is undoubtedly a central determinant of the welfare of humankind. Economists studying individual projects, moreover, routinely find that the benefits of innovation to society as a whole greatly exceed the benefits to the firms that develop the innovation.” Jonathan B. Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575, 576 (2007). On the positive externalities associated with research and development, see Timothy F. Bresnahan, *The Mechanisms of Information Technology's Contribution to Economic Growth*, in INSTITUTIONS, INNOVATION AND GROWTH: SELECTED ECONOMIC PAPERS 135–37 (Jean-Phillipe Toufflut ed., 2003); Zvi Griliches, *The Search for R&D Spillovers*, 94 SCANDINAVIAN J. ECON. S29 (Supp. 1992).

²³⁶ Klein & Wiley, *supra* note 31, at 619.

²³⁷ Admittedly, one reason for permitting simple monopoly pricing is that it would be quite difficult for a court or agency to act as price regulator. By contrast, it would be relatively easy for a court to preclude tying aimed at price discrimination. Absent this

Elhauge rejects the view that tying-induced price discrimination enhances dynamic efficiency.²³⁸ Invoking the literature on patent races, he first maintains that firms often squander resources on attempts to innovate.²³⁹ He observes that when numerous firms vie for a patent, many research efforts end up being duplicative, and thus the *total* marginal benefit of a single competitor's effort (i.e., the degree to which that effort increases the likelihood that a successful innovation will be developed at all) is often less than the *individual* marginal benefit the firm reaps from such effort (i.e., the increased likelihood that *that firm* will successfully develop the innovation).²⁴⁰ Any individual firm, though, will make every effort that produces an individual marginal benefit exceeding its marginal cost, even if the effort is socially wasteful in that the total net marginal benefit it creates is less than its marginal cost.²⁴¹ Accordingly, Elhauge observes, efforts to attain patents often waste resources, and permitting patent holders to increase the spoils of a patent through tying-induced price discrimination would raise the stakes of patent races and thereby exacerbate their inefficiency.

Elhauge then suggests that this patent race insight applies more generally to all efforts to attain market power. Citing Judge Posner's claim that monopoly profits tend to be dissipated by wasteful efforts aimed at securing monopoly

administrative consideration, though, the case for forbidding tie-ins aimed at price discrimination is less compelling than the case for forbidding simple monopoly pricing.

²³⁸ Elhauge, *supra* note 9, at 439–42.

²³⁹ *Id.* at 440 (citing SUZANNE SCOTCHMER, *INNOVATION AND INCENTIVES* 100–03 (2004); Partha Dasgupta & Joseph Stiglitz, *Uncertainty, Industrial Structure, and the Speed of R&D*, 11 BELL J. ECON. 1, 18 (1980); Pankaj Tandon, *Rivalry and the Excessive Allocation of Resources to Research*, 14 BELL J. ECON. 152, 152, 156–57 (1983)).

²⁴⁰ In other words, a development effort by an individual firm may make it more likely that *that firm* will succeed in developing the innovation, without increasing the overall odds that the innovation will be developed. Elhauge, *supra* note 9, at 440.

²⁴¹ Elhauge explains:

[F]irms do not stop investing in efforts to create patents when marginal investment cost equals the *marginal* social gain, but continue investing until it equals the *average* gain from such an investment. For example, a firm would invest \$1 million to be the hundredth research team with a 1/100 chance of becoming the first discoverer of an innovation that will generate \$100 million in profits, even if having a hundredth team does not meaningfully increase the marginal odds that someone will discover the innovation.

Id. This is really an externality argument. The claim is that a single firm's efforts in a patent race create negative externalities in that they reduce the chances of success of the other competitors in the race. Given that the firm externalizes some of the cost of its research efforts, it will tend to over-invest in research. See Yoram Barzel, *Optimal Timing of Innovations*, 50 REV. ECON. & STAT. 348, 349 (1968); Jack Hirshleifer, *The Private and Social Value of Information and the Reward to Inventive Activity*, 61 AM. ECON. REV. 561, 561 (1971); Klein & Wiley, *supra* note 31, at 617–18; Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 AM. ECON. REV. 691, 691 (1983).

power.²⁴² Elhauge asserts that permitting tying-induced price discrimination would enhance the reward for attaining the power to charge above-cost prices to some consumers (i.e., the power to enhance one's profits via price discrimination) and would thereby encourage socially wasteful efforts to attain such power. He thus concludes that "considering ex ante [dynamic efficiency] effects does not support allowing additional exploitation of market power. To the contrary, considering ex ante costs *increases* the social loss from such exploitation."²⁴³

The problem with Elhauge's argument is that most efforts to attain the power to price discriminate—a power often possessed even by firms participating in highly competitive markets²⁴⁴—are not socially wasteful but, in fact, enhance social welfare.²⁴⁵ The sort of patent race to which Elhauge refers involves a winner-take-all contest in which the efforts of non-winners are simply squandered. It is akin to the competition for a monopoly taxi franchise granted by a local government, where potential recipients of the franchise would spend significant sums on socially wasteful lobbying, and raising the value of the franchise by permitting the recipient to engage in price discrimination would simply exacerbate the lobbying waste.²⁴⁶

But this vision of a zero-sum game is inaccurate. Even in competitions for patents, the efforts of non-prevailing competitors are not inevitably wasted.²⁴⁷

²⁴² See Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807, 807–09, 821 (1975). Elhauge summarizes Posner's argument as follows:

[C]ompetition to obtain market power dissipates the resulting monopoly profits regardless of the source of that market power. . . . [F]irms will find it profitable to incur costs to obtain market power up until those costs equal the expected monopoly profits. If the costs were lower than expected monopoly profits, then more firms would incur those costs to try to obtain the market power position, until the two equilibrated. Thus, if one properly includes the costs of those who *failed* to obtain the market power position, the total firm costs of obtaining market power will dissipate the resulting monopoly profits.

Elhauge, *supra* note 9, at 441 (footnotes omitted).

²⁴³ Elhauge, *supra* note 9, at 441.

²⁴⁴ See *Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 45 (2006) ("[I]t is generally recognized that [price discrimination] also occurs in fully competitive markets."); WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 374–75 (2003); William J. Baumol & Daniel G. Swanson, *The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power*, 70 ANTITRUST L.J. 661, 662–66 (2003).

²⁴⁵ See Klein & Wiley, *supra* note 31, at 616–17.

²⁴⁶ *Id.* at 616.

²⁴⁷ As Landes and Posner have observed:

Two qualifications to the economic criticism of patent races should be noted. First, the research expenditures by the losers of the race may not be wasted even if the race does not accelerate the inventive process by a day, for the expenditures will generate information that the losers may be able to use in other projects. Second, patent races

Moreover, efforts to attain the power to engage in tying-induced price discrimination are significantly less likely to be wasteful than are efforts to win a patent race. To engage in price discrimination, all a seller needs is (1) a downward-sloping demand curve for his product (indicative of the fact that the product lacks perfect substitutes so that some consumers are willing to pay relatively high prices for it), and (2) some means to administer the system of discriminatory pricing (i.e., to segregate consumers and charge them different prices, while avoiding arbitrage). When it comes to tying-induced price discrimination, the tie-in provides the latter requirement. Thus, the seller needs only to distinguish his product or service so that some consumers will deem it unique and pay above-cost prices for it. Given that there are myriad ways to distinguish one's product, it is unlikely, for any particular distinction, that so many competitors will be vying for that niche that losers' efforts will be wasted.²⁴⁸ Thus, the situation is a far cry from a patent race or franchise competition where many firms compete in a winner-take-all contest.²⁴⁹

need not produce any social waste at all in cases . . . in which there are as it were multiple prizes and hence more than one winner.

LANDES & POSNER, *supra* note 244, at 301.

²⁴⁸ Some may contend that permitting tying-induced price discrimination, thereby increasing the reward for selling a differentiated product, may encourage "too much" brand differentiation. But brand differentiation efforts—a mainstay of business competition—are quite common in highly competitive markets, and antitrust tribunals are in a poor position to determine when, if ever, efforts at brand differentiation cause more harm than good. As Klein and Wiley have argued:

It is also not the role of antitrust to determine, for example, that there are too many restaurants in the economy or that restaurants are of too diverse a variety because of price discrimination. We look to the unsupervised competitive market process and not to antitrust law to settle such issues.

Klein & Wiley, *supra* note 31, at 620.

²⁴⁹ As Klein and Wiley have explained:

This monopoly franchise analysis does not apply to the usual competition for the ability to price discriminate that occurs in the marketplace. In particular, this analysis assumes competition is for an artificially created monopoly asset and is taking place through socially wasteful lobbying. In contrast, competition in the usual marketplace context is for assets (such as intellectual property) that permit a firm to produce differentiated (but not necessarily monopoly) goods that give it the ability to price above marginal cost and to price discriminate. Competition for these assets proceeds via investments that are socially productive, not socially useless. Moreover, this investment process occurs in a competitive context, where any increased profit from price discrimination is passed on to consumers in the form of additional investments along whatever dimensions give the firm the ability to price above marginal cost and price discriminate. For example, firms might spend more to create a greater variety of products, to improve their brand names, to multiply their retail outlets, or to undertake R&D for product improvement. The range of potential investments is limited only by the imagination of smart people who would like to make more money, which they only

Elhauge's analogy to patent races and his attempt to downplay the dynamic efficiencies created by permitting tying-induced price discrimination therefore fail.

3. *The Prevailing Liability Rule Does Not Permit Welfare-Enhancing Tie-Ins.*

Elhauge's primary argument in defense of current tying doctrine, which does not require a plaintiff to establish significant tied market foreclosure,²⁵⁰ is that tying's nonforeclosure, price-discrimination effects are inefficient. But, perhaps anticipating the efficiency arguments set forth above, he also asserts a back-up argument: he maintains that reform of tying doctrine is unnecessary because the prevailing liability rule would acquit particular instances of tying that are, in fact, efficient. Contending that "the quasi-per se rule prohibits ties only when a defendant with market power cannot prove an offsetting efficiency,"²⁵¹ he maintains that "in those cases where tying-induced price discrimination does increase ex post [i.e., static] total welfare, the defendant should be able to prove an output-increasing efficiency [that offsets any adverse effects], which would make quasi-per se rule condemnation inapplicable."²⁵² In actuality, the Supreme Court has never recognized a general efficiencies defense for those tie-ins deemed per se illegal.

Elhauge locates the genesis of the purported efficiencies defense in *Independent Ink*.²⁵³ After arguing (incorrectly) that the *Independent Ink* Court deemed tying's price-discrimination effects to be anticompetitive,²⁵⁴ he asserts that "it is actually a misnomer to refer to current tying doctrine as a quasi-per se rule."²⁵⁵ He says that the prerequisites to per se condemnation—tying market power and a "not insubstantial" effect on dollar volume in the tied market—are usually sufficient to establish tying-induced price discrimination,²⁵⁶ so the liability test actually "requires proof of the elements necessary to achieve anticompetitive effects."²⁵⁷ He then makes the following curious remarks:

can do by creating things for which consumers are willing to pay. Under typical circumstances, therefore, competition for the ability to price discriminate is not necessarily wasteful at all but is very likely to be socially efficient.

Id. at 616–17.

²⁵⁰ See *supra* note 83 and accompanying text.

²⁵¹ Elhauge, *supra* note 9, at 430; see also *id.* at 401, 427.

²⁵² *Id.* at 434.

²⁵³ *Id.* at 425 (discussing reasoning in *Illinois Tool Works, Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 42–46 (2006)).

²⁵⁴ See *supra* notes 110–23 and accompanying text.

²⁵⁵ Elhauge, *supra* note 9, at 425.

²⁵⁶ They are insufficient, according to Elhauge, only in the narrow set of cases in which (1) the tie-in involves fixed proportions of the tying and tied products, and (2) the products lack separate utility. See *supra* notes 11, 81 and accompanying text.

²⁵⁷ Elhauge, *supra* note 9, at 425.

Perhaps references to a quasi-per se rule were meant to reflect a notion in older cases that ties lacked any procompetitive justifications. But the Court has always considered procompetitive justifications before rejecting them, and [*Independent Ink*] affirmatively states that the Court now accepts the view that ties can have procompetitive justifications. It thus now seems likely that a tie can be justified by evidence that the tie is the least restrictive way to achieve efficiencies large enough to offset the anticompetitive effects.

Accordingly, today it is more accurate to read Supreme Court precedent on tying as embracing a rule of reason, where anticompetitive effects must be shown or inferred and procompetitive justifications are admissible.²⁵⁸

The Supreme Court would likely be surprised to learn that it had, in a unanimous opinion purporting to address a narrow issue,²⁵⁹ abrogated a per se rule that it recently deemed so historically entrenched as to be beyond question.²⁶⁰ According to Elhauge, the *Independent Ink* Court held that a tie of unpatented ink to patented printers “was . . . illegal upon proof of market power over printers, *absent offsetting efficiencies*.”²⁶¹ But the Court never suggested that the tie-in at issue could escape condemnation if the defendant established offsetting efficiencies. While it remanded the case so that the plaintiff, which had relied on precedents suggesting that tying market power would be presumed, could have an opportunity to prove such power,²⁶² it neither instructed the lower court to consider offsetting efficiencies in determining liability nor suggested that such efficiencies would save a tie-in that satisfied the *Jefferson Parish* test for per se illegality.

Perhaps Elhauge’s inference that the *Independent Ink* Court embraced a de facto rule-of-reason analysis (complete with an efficiencies defense) is based on the Court’s observation that its “strong disapproval of tying arrangements has substantially diminished” over the years and its express rejection of the assumption that “[t]ying arrangements serve hardly any purpose beyond the suppression of competition.”²⁶³ But the Court noted that it had rejected that assumption as far back as the 1977 *Fortner II* decision.²⁶⁴ If its rejection of the assumption effectively transformed the per se rule against tying into a rule-of-

²⁵⁸ *Id.* at 425–26 (footnote omitted).

²⁵⁹ See *supra* notes 115–17 and accompanying text (discussing narrowness of issue presented in *Independent Ink*).

²⁶⁰ See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 9 (1984) (“It is far too late in the history of our antitrust jurisprudence to question the proposition that certain tying arrangements pose an unacceptable risk of stifling competition and therefore are unreasonable ‘*per se*.’”).

²⁶¹ Elhauge, *supra* note 9, at 425 (emphasis added) (citing *Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 42–43 (2006)).

²⁶² *Indep. Ink*, 547 U.S. at 46.

²⁶³ *Id.* at 35 (quoting *Standard Oil Co. v. United States*, 337 U.S. 293, 305–06 (1949)).

²⁶⁴ *Id.* at 36 (observing that assumption had been rejected in *United States Steel Corp. v. Fortner Enterprises, Inc. (Fortner II)*, 429 U.S. 610 (1977)).

reason analysis, as Elhauge seems to assume, then that transition occurred thirty years before *Independent Ink*. In its 1984 *Jefferson Parish* decision, though, the Court expressly distinguished two types of tie-ins: those that are per se illegal (because the seller has market power over the tying product) and those that are subject to a rule-of-reason analysis (because the seller lacks such power).²⁶⁵ If, as Elhauge suggests, the Court's recognition that tie-ins may have procompetitive effects renders all tie-ins subject to a de facto rule of reason that includes an efficiencies defense, then it would have made little sense for the *Jefferson Parish* Court to draw an express distinction between per se illegal tie-ins and those that are subject to an inquiry into actual market effects under the rule of reason.²⁶⁶ It would be especially odd to distinguish between those two categories of tie-ins but then permit offsetting efficiencies to be considered for both. Thus, one should not conclude that the Court's admission that tie-ins may enhance competition—a concession it made as far back as 1977—creates a general efficiencies defense in tying cases and abrogates the per se rule against tie-ins meeting the traditional criteria for per se condemnation.

This is not to say, of course, that efficiencies are altogether irrelevant in deciding whether to condemn a tie-in under the per se rule. Current tying doctrine does make some accommodation for efficient tie-ins, but it does not do so through a general efficiencies defense that would acquit metering (and other) tie-ins that result in output-enhancing price discrimination. The accommodation for (some) efficient tie-ins has instead occurred by requiring tying plaintiffs to establish that the challenged product offering is a tie-in of multiple products (e.g., printer and ink cartridge) rather than an integrated single product (e.g., a pair of shoes—one left and one right). Plaintiffs typically must do so by showing an absence of obvious efficiencies resulting from the joint provision of the purportedly separate products.²⁶⁷ As Judge Posner has explained:

The problem is that there is no obvious way of deciding whether a product is a single product or an assemblage of components. The practice has been to classify a product as a single product if there are rather obvious economies of joint provision, as in the left-shoe-right-shoe example. Although this approach seems to take what would otherwise be a matter of defense and make its absence a threshold requirement of the offense, it does serve to screen out many silly cases.²⁶⁸

²⁶⁵ *Jefferson Parish*, 466 U.S. at 15–16 (distinguishing per se illegal tie-ins from those to be analyzed under rule-of-reason).

²⁶⁶ Indeed, the *Jefferson Parish* Court referred to per se illegal tie-ins as those subject to “condemnation without inquiry into actual market conditions.” *Id.* at 15. This characterization suggests that a court should not consider the efficiency effects of tie-ins falling within the ambit of the per se rule.

²⁶⁷ See SULLIVAN ET AL., *supra* note 24, at 483–84.

²⁶⁸ *Jack Walters & Sons Corp. v. Morton Bldg., Inc.*, 737 F.2d 698, 703 (7th Cir. 1984) (citations omitted).

While this approach does provide what is, in effect, an efficiencies “defense” for some product offerings involving literal tie-ins,²⁶⁹ it is focused solely on one type of efficiency: that resulting from economies of joint provision. Contrary to Elhauge’s suggestion, it would not generally acquit “those cases where tying-induced price discrimination does increase ex post total welfare.”²⁷⁰ Nor have courts recognized any general efficiencies defense that would do so.

Elhauge’s challenge to the view that tying liability should be limited to tie-ins involving substantial tied market foreclosure therefore fails. As a descriptive matter, the Supreme Court has not recognized the nonforeclosure effects of tying as “anticompetitive” effects.²⁷¹ As a normative matter, tie-ins that do not involve substantial tied market foreclosure generally enhance static and, more importantly, dynamic efficiency and should be permitted.²⁷² Because current tying doctrine fails to acquit a great many efficiency-enhancing tie-ins,²⁷³ the Supreme Court would do well to abrogate the current quasi-per se rule against tying and replace it with a rule of reason that focuses on the degree to which a challenged tie-in forecloses marketing opportunities within the tied product market and includes a genuine efficiencies defense.

IV. WHY SOME FORM OF BELOW-COST PRICING SHOULD BE A PREREQUISITE TO BUNDLED DISCOUNTING LIABILITY

Like his tying analysis, Elhauge’s analysis of bundled discounts challenges a proposition that efficiency-minded antitrust scholars have largely embraced—in this case, the near-consensus view that there should be a safe harbor for bundled discounts resulting in prices that are, in some sense, above-cost.²⁷⁴ Once again, his challenge is unfounded.

Scholars and commentators have long recognized that bundled discounts are a different competitive animal than straightforward, single-product price cuts.²⁷⁵ When a seller cuts a single product’s price to a level that equals or

²⁶⁹ Albeit, a “defense” whose absence the plaintiff must prove.

²⁷⁰ Elhauge, *supra* note 9, at 434.

²⁷¹ See *supra* Part III.A.

²⁷² See *supra* Part III.B.1–2.

²⁷³ See *supra* Part III.B.3.

²⁷⁴ See, e.g., AMC REPORT, *supra* note 5, at 12, 83, 99–100; BUSH DOJ SINGLE-FIRM CONDUCT REPORT, *supra* note 5, at 101–02; Crane, *supra* note 5, at 474–75; Hovenkamp, *supra* note 5, at 852–54; Lambert, *supra* note 4, at 1691 n.15; Muris & Smith, *supra* note 5, at 425; Nalebuff, *supra* note 5, at 328–43.

²⁷⁵ See, e.g., HOVENKAMP, *supra* note 6, at 172 (explaining why “[b]undled” discounts may be different” than single-product quantity or loyalty discounts); Lambert, *supra* note 4, at 1694–97.

exceeds the seller's cost, any rival that is as efficient a producer as the seller could match the discount.²⁷⁶ Accordingly, the Supreme Court has held that any simple price cut resulting in a price exceeding the seller's cost (any "above-cost price cut") is immune from antitrust liability.²⁷⁷ This is not because an above-cost price cut can never occasion anticompetitive harm. Commentators have recognized that so-called "limit pricing" may prevent the price-cutter's rivals from attaining minimum efficient scale—i.e., from *becoming* an equally efficient rival—and may thereby occasion anticompetitive harm.²⁷⁸ But attempts to police above-cost price cuts aimed at preventing rivals from attaining equivalent efficiencies would likely deter procompetitive discounts, and the law therefore wisely limits predatory pricing liability to instances in which the discounter prices below its own cost, charging a price that an equally efficient rival could not profitably match.²⁷⁹

When it comes to bundled discounts, though, one cannot assume that any rival that is currently as efficient as the discounter could match any discount resulting in an above-cost price for the bundle.²⁸⁰ If the seller has monopoly power over one product in the bundle (and thus charges an above-cost price for that "monopoly product" if purchased alone) but faces competition on another (and thus prices that "competitive product" near its cost), the seller can reduce the price of the bundle by an amount equal to the difference between the cost and the unbundled price of its monopoly product without pricing the bundle below its aggregate cost. If purchasers typically buy both products in the

²⁷⁶ See 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 768b2, at 149 (2d ed. 2002) ("For single-item discounts, no matter how measured or aggregated, injury to an equally efficient rival seems implausible."); Lambert, *supra* note 4, at 1694–95 ("An above-cost single-product volume discount may always be matched by an equally efficient competitor, for if the discounter's final prices are profitable (i.e., above cost), then any equally or more efficient rival could offer the same price and remain in business.")

²⁷⁷ *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 222–24 (1993).

²⁷⁸ See, e.g., JOE S. BAIN, INDUSTRIAL ORGANIZATION 269–70 (2d ed. 1968); F.M. SCHERER & DAVID ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 356–66 (3d ed. 1990); JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 367–74 (1992); Aaron S. Edlin, *Stopping Above-Cost Predatory Pricing*, 111 YALE L.J. 941, 941–42 (2002).

²⁷⁹ As Hovenkamp has observed:

The source of this [*Brooke Group*] rule is *not* a robust belief that above-cost prices can never be competitively harmful; many economists believe they can be, and many above-cost anticompetitive pricing strategies have been modeled. One problem is that if we admit claims of predatory pricing on above-cost prices there will be hundreds of claimants, and the courts are simply not up to the task of separating out good from bad claims.

Hovenkamp, *supra* note 6, at 161 (endnote omitted). Hovenkamp thus concludes that "[a]n intentionally *under-deterrent* predatory pricing rule may do much good by reaching many instances of predation while permitting all instances of bona fide competition." *Id.*

²⁸⁰ See *id.* at 172–73; Lambert, *supra* note 4, at 1694–97.

bundle, an equally efficient producer of the competitive product may find itself excluded by this above-cost bundled discount. That is because any purchaser contemplating whether to forego the bundled discount (i.e., to purchase the monopoly product from the bundled discounter and the competitive product from the discounter's equally efficient single-product rival) will have to pay full price for the monopoly product and will thus prefer the monopolist's bundle unless the single-product rival lowers the price of the competitive product by an amount equal to the monopolist's overall bundled discount. Given that the single-product rival is already pricing near its cost, it could not profitably do so.²⁸¹ Thus, an above-cost bundled discount, unlike an above-cost simple price cut, could exclude an equally efficient rival.²⁸²

There is, though, a situation in which a bundled discount cannot exclude an equally efficient single-product rival. If the discount results in an above-cost price for the competitive product *after the entire dollar value of the discount is attributed to that product*, then any equally efficient producer of the competitive product could meet the discount simply by reducing the price of its product.²⁸³ Given this possibility, a number of courts and commentators have argued that

²⁸¹ See, e.g., *LePage's Inc. v. 3M*, 324 F.3d 141, 155 (3d Cir. 2003) (en banc) ("The principal anticompetitive effect of bundled rebates . . . is that when offered by a monopolist they may foreclose portions of the market to a potential competitor who does not manufacture an equally diverse group of products and who therefore cannot make a comparable offer.").

²⁸² The textbook example of the problem involves a bundled discount on shampoo and conditioner. See *Ortho Diagnostic Sys., Inc. v. Abbott Labs., Inc.*, 920 F. Supp. 455, 467 (S.D.N.Y. 1996). For a version of that stylized example (using slightly more realistic numbers), suppose that manufacturer *A* sells both shampoo and conditioner, is a monopolist in the conditioner market, and competes in the shampoo market against manufacturer *B*, which sells only shampoo. *B* is the more efficient shampoo manufacturer, producing shampoo at a cost of \$1.25 a bottle compared to *A*'s cost of \$1.50 per bottle. *A*'s cost of producing a bottle of conditioner is \$2.50. If purchased separately, *A*'s per-bottle prices for shampoo and conditioner are \$2.00 and \$4.00, respectively. But *A* offers customers a \$1.00 bundled discount, charging only \$5.00 for the shampoo/conditioner package. While this discounted price is still above *A*'s cost for the bundle (\$4.00), it could tend to exclude *B*. Assuming that shampoo buyers must also buy conditioner (in equal proportions), buyers would have to pay *A*'s unbundled conditioner price of \$4.00 if they purchased *B*'s shampoo and would thus be unwilling to pay more than \$1.00 for the *B* brand of shampoo. That price, though, is below *B*'s \$1.25 cost. Thus, *A*'s bundled discount would tend to exclude *B* from the market even though (1) the discounted price (\$5.00) is above *A*'s aggregate cost for the bundle (\$4.00), and (2) *B* is the more efficient shampoo producer.

²⁸³ Consider, for example, a variation of the example in *supra* note 282. If *A* were to limit its bundled discount to the amount by which its unbundled price for shampoo (the competitive product) exceeded its cost (\$0.50), then any equally efficient shampoo rival could compete with *A*'s bundled discount by lowering its price to the level of its cost. *A* would charge \$5.50 for its shampoo/conditioner bundle (\$0.50 less than the aggregate price of the two products if purchased separately), and any equally efficient shampoo rival could stay in business by lowering its shampoo price to its (and *A*'s) \$1.50 cost, enabling consumers to purchase a package consisting of *A*'s \$4.00 conditioner and the rival's \$1.50 shampoo.

there should be a safe harbor for bundled discounts that pass muster under the so-called “discount attribution test,” which immunizes bundled discounts that result in above-cost pricing of the discounter’s competitive product after the entire amount of the discount is attributed to that product.²⁸⁴

Other efficiency-minded commentators have gone even further, arguing that bundled discounts should be per se lawful as long as the discounted price of the bundle exceeds the aggregate cost of the products in the bundle.²⁸⁵ Those commentators do not contend that discounts passing muster under their proposed “aggregate discount” test can never be exclusionary. Instead, they emphasize error cost concerns, arguing that bundled discounts resulting in an above-cost price for the bundle are *rarely* anticompetitive and that attempts to prevent anticompetitive instances of such discounting are likely to deter procompetitive bundled discounting.²⁸⁶ If that is true, then error costs (the sum of losses from false acquittals of anticompetitive practices and false convictions of procompetitive ones) may be minimized by a liability rule that immunizes

²⁸⁴ See *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 906 (9th Cir. 2008) (adopting discount attribution test); BUSH DOJ SINGLE-FIRM CONDUCT REPORT, *supra* note 5, at 101–02; Crane, *supra* note 5, at 474–75; Hovenkamp, *supra* note 5, at 852–54; Lambert, *supra* note 4, at 1691 n.15; Nalebuff, *supra* note 5, at 328–43; cf. AMC REPORT, *supra* note 5, at 12, 83, 99–100. While the AMC Report calls for an additional recoupment element, such requirement makes little sense because bundled discounts are generally profitable and therefore create no losses that the discounter must later recoup. See Carlton et al., *supra* note 5, at 609.

²⁸⁵ See HOVENKAMP, *supra* note 6 at 173–74; Muris & Smith, *supra* note 5, at 425. A number of amici advocated this position in (unsuccessfully) urging the U.S. Supreme Court to grant certiorari in the *LePage’s* case. See Brief for the Boeing Co. et al. as Amici Curiae in Support of Petitioner at 13, *3M Co. v. LePage’s Inc.*, 542 U.S. 953 (2004) (mem.) (No. 02-1865), 2003 WL 22428377, at *13; Brief for Amicus Curiae the Business Roundtable in Support of Petitioner at 6, 16, *LePage’s Inc.*, 542 U.S. 953 (No. 02-1865), 2003 WL 22428382, at *6, *16; Brief for Amici Curiae Morgan Stanley et al. in Support of Petition for Certiorari at 5–7, *LePage’s Inc.*, 542 U.S. 953 (No. 02-1865), 2003 WL 22428378, at *5–7; Brief of Washington Legal Foundation and National Ass’n of Manufacturers as Amici Curiae in Support of Petitioner at 19, *LePage’s Inc.*, 542 U.S. 953 (No. 02-1865), 2003 WL 22428379, at *19.

²⁸⁶ As Hovenkamp has explained in arguing for the aggregate discount safe harbor:

The more serious problem with monopolization challenges to bundled discounts is administrative. The great majority of discounts, bundled and otherwise, are procompetitive. The anticompetitive bundled discount is the small subset that is “excessive” because the discounts would be irrational but for their ability to exclude an equally efficient rival. Making such determinations presumes that the court has much greater cost-measuring capacity than it has in fact. Even though the theory of the bundled discount is properly analogized to tying or exclusive dealing rather than predatory pricing, an administratively prudent rule might insist on a showing that the discounted package is priced below average variable cost. . . . Such a rule might be somewhat underdeterrent, but it would eliminate most of the false positives that are likely to occur if the courts permit challenges to above-cost discount packages.

any bundled discount resulting in a price that exceeds the aggregate cost of the products in the bundle.

While some advocates of the discount attribution rule would not go so far as to endorse the aggregate discount rule,²⁸⁷ there does appear to be a good deal of agreement among efficiency-minded antitrust scholars that there should be a safe harbor for bundled discounts that are, in some sense, above cost. Elhauge rejects that view.

A. Elhauge's Argument

In contesting the view that there should be some sort of price-cost safe harbor for bundled discounts, Elhauge first rejects the notion that courts should treat such discounts leniently on the ground that they involve price cuts. He says that because a bundled discount occurs whenever "the defendant charges higher prices to buyers who won't comply with a bundling condition than to buyers who will," it need not involve a real price cut if the unbundled price for one or both of the products is artificially set above the level that would persist in the absence of the discounting scheme.²⁸⁸ Suppose, for example, that the unbundled prices of monopoly ("linking")²⁸⁹ product *A* and competitive ("linked") product *B* would normally be \$9 and \$7, respectively (aggregate price = \$16), but that the seller raises the unbundled *A* price to \$11 (aggregate price = \$18), while offering to sell an *A-B* package for \$17. The \$1 bundled discount here is really not a discount at all, Elhauge says, for the \$17 "discounted" price exceeds the \$16 aggregate price of the products if sold separately in the "but-for" world—i.e., in the absence of the bundled discounting scheme.²⁹⁰

Elhauge therefore asserts that the first step in evaluating a bundled discount should be to determine whether the apparent discount involves any real price cut.²⁹¹ To do so, he says, an evaluating court should ask whether the unbundled price of the linking product (\$11 in the example above) exceeds the unbundled price that would exist if the bundled discount were not offered (\$9 in the example above).²⁹² If it does, Elhauge says, then the bundled discount involves no real discount at all but instead merely permits a buyer to avoid a *penalty* for not taking the bundled offering.²⁹³ (In the above example, for instance, the bundled discount really amounted to avoidance of a \$1 penalty for purchasing *A*

²⁸⁷ See, e.g., Lambert, *supra* note 4, at 1691 n.15, 1705, 1742–53 (rejecting aggregate discount test as underdeterrent but endorsing rule that would include discount attribution safe harbor).

²⁸⁸ Elhauge, *supra* note 9, at 450.

²⁸⁹ Elhauge refers to the bundled product over which the seller has market power as the "linking" (analogous to "tying") product. The other bundled product is the "linked" (analogous to "tied") product. See *id.*

²⁹⁰ See *id.* at 450, 469.

²⁹¹ *Id.* at 468–69.

²⁹² *Id.* at 451, 468.

²⁹³ *Id.* at 450.

and *B* separately rather than as a bundle.) Bundled price reductions that provide no real discount from but-for price levels but instead simply allow the buyer to avoid a penalty for failure to purchase both products are tantamount to tying, Elhauge says.²⁹⁴ While buyers are not *required* by the seller to take both products, as in a true tie-in, they are penalized if they do not do so.²⁹⁵ In an extreme case, as when a seller offers products *A* and *B* for \$10,000 and \$10, respectively, but sells an *A-B* package for \$20, a bundled discount will have precisely the same effect as a tie-in, for no one would ever purchase the products separately.

Having contended that bundled discounts from artificially inflated unbundled prices involve the same sort of coercion as tie-ins, Elhauge proceeds to argue that such discounts may cause the same sorts of consumer harms. Bundled discounts may result in metering (“intraproduct price discrimination”),²⁹⁶ he contends, if the seller sets the unbundled price of the linking product at or above the “choke price” level (i.e., the level at which zero units would be purchased) but then offers a “discount” to buyers who purchase the linking product (e.g., the printer) at a competitive price and the linked product (e.g., ink) at supracompetitive prices. All consumers will “voluntarily” purchase both the linking and the linked products from the seller, and the pricing scheme will permit the seller to charge higher effective prices to heavier linked product users, who presumably attach a higher value to the seller’s linking product than do the consumers that purchase fewer units of the linked product.²⁹⁷

The effect resulting from Stigler-type tying (“interproduct price discrimination”)²⁹⁸ is similarly achievable, Elhauge asserts, using bundled discounting rather than tying.²⁹⁹ Suppose that the seller produces products *A* and *B* at a marginal cost of \$0 and has market power in both the *A* and *B* markets. Buyer 1 values product *A* at \$5 and product *B* at \$9; Buyer 2 values product *A* at \$9 and product *B* at \$5. Absent tying or bundling, the seller would maximize profits by charging \$5 for each product (the seller would sell 2 *As* and 2 *Bs*; total profit = \$20). If the seller tied the products together and sold the package for \$14, each buyer would take the package, and the seller could raise its profits to \$28. But the seller could achieve the same result using bundled discounting, rather than tying, if it raised the unbundled price for each unit above the choke price.³⁰⁰ For example, the seller could forego tying but achieve

²⁹⁴ Elhauge, *supra* note 9, at 468 (“When the linking product’s unbundled price exceeds its but-for price, bundled discounts have the same power effects as ties and thus should be treated like ties by applying a similar quasi-per se rule . . .”).

²⁹⁵ *Id.* at 450 (“[O]ne can think of tying as simply a special case of bundled discounts, where the unbundled price on the linking product is set at infinity.”).

²⁹⁶ *Id.* at 404, 454.

²⁹⁷ *Id.* at 454–55.

²⁹⁸ *Id.* at 405, 455.

²⁹⁹ *Id.* at 455.

³⁰⁰ Elhauge, *supra* note 9, at 455.

the same result by charging \$10 for *A*, \$10 for *B*, or \$14 for the *A-B* package. All buyers would take the package, and the seller would earn profits of \$28.

Tying's third purported power effect results when a seller imposes a sort of two-part tariff in order to "extract individual consumer surplus."³⁰¹ The intuition is that consumers who purchase multiple units of a monopolist's tying product at the monopoly price likely value the first purchased units more than the last and therefore enjoy some surplus on inframarginal units, even when the product is priced at monopoly levels. If the monopolist could levy some "charge" for the right to purchase its monopoly product at the monopoly price, it could usurp some of that surplus for itself. Imposing a requirements tie and charging a supracompetitive price for the tied product allows it to do so: Agreeing to pay the monopolist a supracompetitive price for one's requirements of the tied product is the "price" one pays for the right to buy the monopolist's tying product at monopoly prices. As long as the consumer's surplus from his tying product purchases exceeds the surplus loss he experiences from buying his tied products at supracompetitive prices, rather than competitive prices, the consumer will agree to the tie-in and will effectively transfer to the monopolist some of the tying product surplus he would experience absent the tying arrangement.³⁰² But a monopolist could achieve this same strategy without engaging in tying, Elhauge says, by setting a high unbundled price for its monopoly (linking) product but substantially discounting the price to buyers who also purchase from the monopolist their requirements of a supracompetitively priced, linked product.³⁰³

Finally, Elhauge contends, bundled discounts could achieve the sort of market foreclosure that decreases market competitiveness.³⁰⁴ If a sufficient number of buyers of the linking (monopoly) product take the bundle in order to

³⁰¹ *Id.* at 407, 451.

³⁰² See *supra* Part II.A.3.

³⁰³ Elhauge, *supra* note 9, at 451–54. Consider, for example, a printer monopolist that also sells scanners (which are sold in a competitive market). Suppose that the monopoly price of a printer is \$200, its choke price is \$950, the competitive price of a scanner is \$50, and its monopoly price is \$100. The printer monopolist might extract individual consumer surplus from buyers who purchase multiple printers by adopting a policy under which it would sell unbundled printers for \$1,000 but would give \$800 discounts to buyers that would agree to purchase all their required scanners from the monopolist for \$100 each. A multi-printer buyer who valued inframarginal printers a great deal may take this "bundled discount." Take, for instance, a purchaser who buys eight printers and values his first at \$900 and each additional one at \$100 less (so \$900, \$800, \$700, \$600, \$500, \$400, \$300, \$200). This consumer ascribes a \$2,800 value to the right to purchase printers at the \$200 monopoly price (\$700 + \$600 + \$500 + \$400 + \$300 + \$200 + \$100). To squander that value on purchases of scanners at monopoly prices, the consumer would have to buy 56 scanners (\$50 * 56 = \$2,800). Thus, as long as the consumer's scanner requirements do not exceed 56, he should assent to the monopolist's bundling condition. For each scanner purchased under the bundled discount arrangement, then, the monopolist would usurp for itself \$50 of surplus that otherwise would go to the consumer.

³⁰⁴ *Id.* at 456–58.

avail themselves of the bundled discount, rival sellers of the linked (competitive) product may lose so many sales that they fall below minimum efficient scale and are driven out of business. This may impair competitiveness in the linked market and, to the extent a linked product could serve as a substitute for the monopolist's linking product, in the linking product market as well.³⁰⁵

The foregoing observations lead Elhauge to propose the following approach for evaluating the legality of a particular bundled discount: If the unbundled price of the linking product exceeds the price the seller would charge for that product absent the bundled discounting scheme (the but-for price), then the bundled discount should be evaluated as if it were a tie-in—i.e., under the prevailing rule that assigns automatic liability if (1) the discounting scheme involves truly separate products, (2) the seller has monopoly power in the linking product market, and (3) the discounting scheme affects a not insubstantial amount of commerce in the linked product market.³⁰⁶ If the unbundled price of the linking product does not exceed the but-for price, so that the practice cannot be analogized to tying, legality should turn on the substantiality of foreclosure in the linked product market.³⁰⁷ If the plaintiff establishes that the discount usurps so much linked product business as to cause significant foreclosure of sales opportunities to linked product rivals (i.e., foreclosure of 20%–30% of opportunities), thus potentially causing those rivals to fall below minimum efficient scale, it should be presumptively illegal. The defendant could rebut the presumption of illegality by proving offsetting efficiencies stemming from the bundled discount.³⁰⁸

For the reasons that follow, Elhauge's proposed approach to evaluating bundled discounts is far too prohibitory and would ultimately impair competition and injure consumers.³⁰⁹

³⁰⁵ *Id.*

³⁰⁶ See *supra* note 83 and accompanying text (stating elements of liability under prevailing tying doctrine).

³⁰⁷ Elhauge, *supra* note 9, at 451, 468.

³⁰⁸ *Id.* at 451, 469–70.

³⁰⁹ The following catalog of arguments against Elhauge's bundled discounts proposal is not exhaustive. Daniel Crane and Joshua Wright, for example, have persuasively criticized Elhauge's proposal for prescribing heroic and unworkable efforts to address what is really a non-problem: "phony" discounts aimed at achieving de facto tie-ins. See Daniel A. Crane & Joshua D. Wright, *Can Bundled Discounting Increase Consumer Prices Without Excluding Rivals?*, COMPETITION POL'Y INT'L, Autumn 2009, at 209, 211–15. Crane and Wright contend that situations in which a monopolist artificially raises its unbundled linking product price but then offers a faux bundled discount to achieve an effective tie-in are implausible or at least unlikely to occur with frequency. See *id.* at 212–14. They explain:

The central problem with Elhauge's argument is that the monopolist cannot obtain much leverage by demanding a price above its profit-maximizing monopoly price. Unless the monopolist has been engaging in some form of limit pricing, it has already priced the monopoly product at the level that makes any further price increase unprofitable. Consequently, any threatened price increase on the monopoly product to

B. Problems with Elhauge's Proposed Approach

1. The Proposed Approach Would Employ a Faulty Screening Device.

Even if one assumes that the sort of phony discount strategy Elhauge envisions is plausible,³¹⁰ Elhauge's approach asks the wrong question to determine whether a bundled discounting arrangement provides immediate consumer benefit in the form of lower prices. In directing courts to begin their analyses by asking whether the unbundled price of the discounter's linking product exceeds the level that would persist absent the discounting scheme, Elhauge assumes that a challenged discount can provide no consumer benefit—and, thus, that courts should afford the discount no deference—if the unbundled price of the linking product exceeds the but-for unbundled price. That is wrong. As long as the discounted price of the bundle is less than the *aggregate* but-for prices, then the bundled discount provides immediate price savings for consumers. Consider, for example, a seller whose monopoly (linking) product *A* costs \$4 to produce and is priced at \$7 in the but-for world and whose competitive (linked) product *B* costs \$3 to produce and, given market competition, is priced at that level in the but-for world. Suppose that the seller raises the unbundled price of *A* to \$8 but offers buyers a bundled discount of \$1.50 on an *A-B* package (so the package sells for \$9.50, rather than \$11). Absent the discounting scheme, consumers would have to pay \$10 for products *A* and *B*, so the bundled discount provides a benefit of \$0.50 to consumers *even though* the discounter raised the unbundled price of the linking product above but-for levels.

A seller might employ this sort of pricing scheme if there were economies of scope in the joint provision of products *A* and *B*.³¹¹ If, for example, selling

punish the buyer for failing to purchase the package would inflict costs on the seller as well as the buyer. The threat to raise the "tying" product's price thus lacks credibility.

Id. at 212–13. For Elhauge's response to this argument by Crane and Wright, see Elhauge, *supra* note 205, at 174–86. I do not here engage the Crane/Wright versus Elhauge debate, focusing instead on other deficiencies with Elhauge's proposal.

³¹⁰ See *supra* note 309.

³¹¹ Economies of scope are not necessary to make this sort of pricing scheme desirable for a monopolist and consumers alike. Even without economies of joint production or distribution, such a pricing strategy could enhance the monopolist's profits—and consumer welfare—if the monopolist faced a double marginalization scenario. Consider, for example, complementary products *x* and *y*, where consumers purchase both *x* and *y*; *x* is sold by monopolist *A*; *y* is sold in an oligopoly market consisting of *A*, *B*, and *C*; and both *x* and *y* are priced above marginal cost. (This sort of dynamic regularly occurs in markets with a high intellectual property component, such as markets for medical devices, pharmaceuticals, and software products. Bundled discounting schemes are common in such markets.) Suppose that *A* produces *x* at a marginal cost of \$5 and sells it for \$9, and that *A*, *B*, and *C* each produce *y* at a marginal cost of \$3 and sell it for \$5. Under these circumstances, *A* can enhance its own profits *and* benefit consumers by raising the separate price of *x* but offering a bundled discount on *xy* packages. With completely separate pricing, *A* earns profit of \$4 on

the products jointly saved the seller \$1, it might wish to encourage purchasers to take the products as a bundle. It could do so by raising the unbundled *A* price and passing along some of the cost-saving to consumers who take the bundle. In this example, selling the products under the bundled discount would provide consumer benefit of \$0.50 per package and enhance the seller's per-package profits by \$0.50. Thus, the question with which Elhauge would have courts begin their analysis—Does the unbundled linking product price exceed the separate price that would exist absent the discounting scheme?—does not, as he assumes, identify those discounts that provide no immediate consumer benefit.

2. The Proposed Approach Is Inadministrable and Therefore Likely to Create Legal Risks that Lead to Overdeterrence.

A second problem with the initial inquiry Elhauge directs courts to make is that it is nearly impossible to answer in practice.³¹² How is a court evaluating a challenged bundled discount to know what linking product price would have prevailed had the discounter not adopted the challenged pricing scheme? Because the linking product will always be one over which the bundled discounter has market power, the court cannot simply look to competitive market prices or the seller's own costs to determine the but-for price; there are no competitive market prices, and the seller, given its market power, would be expected to price at some level above its own costs.

One might suppose that the court could simply ask whether the unbundled linking price exceeds the price the seller charged for the linking product prior to initiation of the bundled discount (the "pre-program" linking price), but Elhauge largely rejects that strategy.³¹³ He observes that pre-program prices may exceed but-for prices during the bundling period where, for example, the seller's costs

each *x* it sells and \$2 on each *y* (\$6 total), but it may frequently lose *y* sales to *B* and *C*, in which case it earns only \$4. If *A* continued to sell *x* at \$9 but also offered a bundled price of \$13 (rather than \$14) for an *xy* package, it would earn only \$5 (rather than \$6) per package, but it would likely pick up more *y* sales from *B* and *C*. If *A* really wanted to pick up *y* sales, it could raise the separate price of *x* to \$10 but sell the *xy* package for \$13. It would still earn profits of \$5 per package, but the inflated separate price of *x* would likely cause it to achieve many more *y* sales. Despite the increased stand-alone price of *x*, consumers would benefit, for they could secure an *xy* package for \$13 rather than \$14, the price they would pay absent the discounting scheme.

³¹² See Crane & Wright, *supra* note 309, at 212 (expressing skepticism "that identifying the 'but-for' price of the linking, *i.e.*, monopoly, product will be feasible in most cases"). Crane and Wright observe that "bundled discounts stories are usually far more dynamic than [a] simplistic two-stage [*i.e.*, before and after] analysis, with constantly shifting pricing and discounting structures, product innovation, cost changes, and industry dynamics making it impossible to determine clean before-and-after figures." *Id.* In addition, they note that "the search for the but-for price is bound to run into the difficulty that . . . bundled discounts often produce price discriminatory effects." *Id.*

³¹³ Elhauge, *supra* note 9, at 468 (rejecting test "that would make bundled discounts legal if the linking product's unbundled price is less than or equal to its pre-bundle price").

are declining or its market power is eroding.³¹⁴ Moreover, he says, using pre-program prices as a benchmark would create “an obvious loophole” because a seller “could simply raise its pre-program price to a high level before it institutes bundled discounts, so that the unbundled price is lower than the artificially raised pre-program price but still exceeds the but-for price.”³¹⁵ He therefore would not permit courts to infer from the fact that unbundled prices equal their pre-bundle levels that the seller has not artificially raised unbundled prices from but-for levels.³¹⁶ Instead, he directs courts to consider a discounter’s internal documents, which could reveal “that the business plan was to raise the unbundled price in order to induce agreement to the bundle,”³¹⁷ or to rely on regression analyses or economic models to establish the but-for price.³¹⁸ Alternatively, he contends, a court could simply *presume* that any defendant that fails to establish an efficiency rationale for its bundled pricing has raised its unbundled linking price above but-for levels in order to induce buyers to take the bundle.³¹⁹

If courts were to embrace Elhauge’s approach and adopt his means of identifying artificially hiked linking prices, any firm implementing a bundled discount would face significant legal risk. Judicial reliance on internal documents would invite plaintiffs to impose burdensome discovery requests in the hope of discovering some “hot document” showing that the firm raised unbundled linking prices so as to encourage customers to take the bundle.³²⁰ Given the difficulty and complexity of regression analysis and the manipulability of expert opinion, any firm implementing a bundled discounting scheme would need to be prepared to produce its own analysis to counter that of a plaintiff’s expert, who may well be believed on the basis of his charisma or

³¹⁴ *Id.*

³¹⁵ *Id.*

³¹⁶ *Id.* Elhauge would, however, permit courts to “presume[] that unbundled prices that exceed pre-program prices also exceed but-for prices.” *Id.* at 469. A defendant could rebut such a presumption by “showing that costs have increased over time.” *Id.* Thus, Elhauge would afford pro-plaintiff, asymmetric treatment to plaintiffs and defendants seeking to use pre-program prices as a referent in determining but-for prices: The fact that unbundled prices equal their pre-program levels could not help a defendant avoid liability, but the fact that unbundled prices exceed pre-program price levels could assist a plaintiff.

³¹⁷ *Id.* at 469.

³¹⁸ *Id.*

³¹⁹ Elhauge, *supra* note 9, at 469.

³²⁰ See generally Geoffrey A. Manne & E. Marcellus Williamson, *Hot Docs vs. Cold Economics: The Use and Misuse of Business Documents in Antitrust Enforcement and Adjudication*, 47 ARIZ. L. REV. 609, 611 (2005) (“[T]he effort to collect business documents that make out an antitrust case is extremely burdensome to antitrust defendants. ‘[S]earching out intent tends to make antitrust litigation interminable . . . with massive discovery or a trial that threatens to overburden the system’” (omissions in original)) (quoting 7 PHILLIP E. AREEDA, ANTITRUST LAW § 1506 (1986)). *Accord* Bell Atl. Corp. v. Twombly, 550 U.S. 544, 558–60 (2007) (discussing unusually high cost of discovery in antitrust cases and consequent possibility of strike suits).

presentation skills rather than the rigor of his analysis.³²¹ If a court were merely to presume that any discounter that cannot produce evidence of efficiencies occasioned by its bundled discount had artificially hiked its unbundled linking price above but-for levels, then the discounter would have to come armed with concrete evidence of bundled discount-induced efficiencies³²² and evidence that the full discount was necessary to induce the requisite number of bundled sales—i.e., that a smaller discount (or other incentive) could not have enabled the firm to achieve the same efficiencies.³²³ Taken together, the likelihood of burdensome discovery requests, the need to counter manipulable expert opinion about but-for price levels, and the obligation to prove bundling-induced efficiencies would likely induce firms to forego proconsumer bundled discount offerings.

3. Any Purely Power (Nonforeclosure) Effects of Bundled Discounts Are Not Anticompetitive.

Fortunately enough, there is no need for courts to make the difficult determination of whether a defendant's unbundled linking price exceeds the but-for level. The sole reason for that inquiry is to identify (and ultimately condemn) those bundled discounts that, while not generating substantial tied market foreclosure, may occasion so-called power effects. As explained above, though, the power effects to which Elhauge points are really just instances of competitively benign (or procompetitive) price discrimination and surplus extraction.³²⁴ As a positive matter, Supreme Court precedent does not deem such effects to be anticompetitive.³²⁵ As a normative matter, courts should not condemn bundled discount arrangements on the basis of the price-discrimination and surplus-extraction effects to which Elhauge points, because such effects are unlikely to reduce total static welfare and are likely to enhance dynamic efficiency (and long-term consumer surplus).³²⁶ There is therefore no need for courts to make heroic efforts to determine but-for linking product prices and compare them to the unbundled prices offered by the defendant. An evaluating court should instead focus on the extent to which a challenged bundled discount forecloses sales opportunities for the defendant's rivals in the linked product market. As explained next, however, the degree of linked market foreclosure should not be the end of the inquiry.

³²¹ See generally HOVENKAMP, *supra* note 6, at 77–91 (discussing limitations of expert testimony in antitrust cases).

³²² See Lambert, *supra* note 4, at 1724–26.

³²³ See *id.* at 1711 (observing that under legal rule requiring discounter to show efficiencies occasioned by discount, “the discount presumably could be no greater than required to attain those efficiencies, for any incremental discount in excess of that amount would effectively be raising rivals’ costs [unjustifiably]”).

³²⁴ See *supra* notes 310–12 and accompanying text.

³²⁵ See *supra* Part III.A.

³²⁶ See *supra* Part III.B.

4. *Linked Market Foreclosure Is Anticompetitive Only if Occasioned by Some Form of Below-Cost Pricing.*

While substantial linked market foreclosure, a prerequisite to legitimately anticompetitive effects, should be a necessary condition for liability based on bundled discounting, such foreclosure should not be a sufficient condition for imposing liability. Not all foreclosure-inducing conduct is anticompetitive. As then-Judge Breyer explained, “[V]irtually *every* contract to buy ‘forecloses’ or ‘excludes’ alternative sellers from *some* portion of the market, namely the portion consisting of what was bought.”³²⁷ If a seller usurps business from its rivals by making an offer that is superior to theirs in terms of product quality or (nonpredatory) price, the “foreclosure” at issue is simply the result of vigorous competition. The main task in any antitrust challenge to foreclosure-inducing conduct, then, is to determine whether the foreclosure or exclusion is anticompetitive, or, to use the language of the case law, whether the defendant has engaged in “unreasonably exclusionary” conduct.³²⁸ While a great debate rages over how to identify unreasonably exclusionary conduct generally,³²⁹ there is a good deal of agreement among courts and commentators that foreclosure or exclusion is *not* “unreasonable” if it results from a plaintiff’s own relative inefficiency³³⁰ or from the plaintiff’s insistence on charging supracompetitive prices (i.e., prices in excess of cost).³³¹

Building on this intuition, the aforementioned discount attribution test aims to identify bundled discounts that could cause *anticompetitive* market foreclosure. As explained above, a court evaluating a bundled discount under the discount attribution test allocates the total dollar volume of the bundled discount to the discounter’s competitive product and asks whether that product, if so discounted, is priced at or above its cost; if so, the discount is legal.³³² The theory underlying this safe harbor is that if the discounted price of the competitive product equals or exceeds the discounter’s cost even after the entire amount of the discount is attributed to that product, then any equally efficient

³²⁷ *Barry Wright Corp. v. ITT Grinnell Corp.*, 724 F.2d 227, 236 (1st Cir. 1983).

³²⁸ See Thomas A. Lambert, *Weyerhaeuser and the Search for Antitrust’s Holy Grail*, 2007 CATO SUP. CT. REV. 277, 279.

³²⁹ See *id.* at 278–86; see also Herbert Hovenkamp, *Exclusion and the Sherman Act*, 72 U. CHI. L. REV. 147 (2005).

³³⁰ See, e.g., *Olympia Equip. Leasing Co. v. W. Union Tel. Co.*, 797 F.2d 370, 375 (7th Cir. 1986) (Posner, J.) (“[A] firm with lawful monopoly power has no general duty to help its competitors, whether by holding a price umbrella over their heads or by otherwise pulling its competitive punches.”); *Murphy Tugboat Co. v. Crowley*, 658 F.2d 1256, 1259 (9th Cir. 1981) (“The antitrust laws do not require the erection of a price umbrella for the benefit of inefficient competitors.”).

³³¹ See, e.g., Hovenkamp, *supra* note 5, at 857 (“[I]t is perverse to condemn package discounts at the behest of a rival who is earning high margins on its own output of the products upon which exclusion is claimed. Such a firm is telling us that it wants to use the antitrust laws rather than competition to guarantee its place in the market.”).

³³² See *supra* notes 283–84 and accompanying text.

single-product seller of the competitive product could match the discount.³³³ The only sellers that would lose sales because of the discount, and thus might be “foreclosed,” would be either (1) less efficient than the bundled discounter, or (2) unwilling to lower price to the level of cost (i.e., the competitive level). Accordingly, no liability should stem from an instance of bundled discounting unless the discount both threatens substantial linked market foreclosure *and* results in below-cost pricing of the competitive product after the entire amount of the discount is allocated to that product. Only under such circumstances could the discount occasion a harm to competition itself.

Elhauge rejects this view. He maintains that the discount attribution test may underdeter by permitting bundled discounts that *cause* rivals to be relatively less efficient.³³⁴ He also contends that the test may reduce consumer welfare by permitting the exclusion of rivals that are less efficient than the discounter but whose presence in the market ultimately benefits consumers.³³⁵ Neither criticism undermines the discount attribution test.

a. Bundled Discounts that Pass Muster Under the Discount Attribution Test Should Not Cause Competitive Rivals to Lose Scale Efficiencies.

If a bundled discount succeeds in attracting enough consumers to the discounter’s bundle, it may usurp so much business from rivals in the linked product market that their output falls below minimum efficient scale.³³⁶ In such a case, Elhauge maintains, “The [linked market] rival cannot match th[e] effective price [as discounted under the discount attribution test] precisely because the bundled discount forecloses enough of the market to prevent it from achieving the same costs as the defendant.”³³⁷ But otherwise equally efficient rivals whose output falls below minimum efficient scale because of a bundled discount (and entrants who would be equally efficient if able to grow to minimum efficient scale) do not actually face such dire straits. Given well-developed capital markets, such “competitive rivals”—those whose efficiency would match or exceed the discounter’s at minimum efficient scale—ought to be able to procure the financing needed to achieve all available scale economies and could therefore match any discount that passes muster under the discount attribution test.³³⁸

³³³ See *supra* note 283 and accompanying text.

³³⁴ Elhauge, *supra* note 9, at 462–63.

³³⁵ *Id.* at 463–64.

³³⁶ See *supra* note 61.

³³⁷ Elhauge, *supra* note 9, at 462–63.

³³⁸ See 2A PHILLIP E. AREEDA ET AL., ANTITRUST LAW ¶ 421(b), at 67 (2d ed. 2002) (“If capital markets are working well, new investment will be made in any market earning anything above competitive returns—a term defined to include sufficient profit to attract new capital—regardless of the absolute cost of entry.”); GEORGE J. STIGLER, THE ORGANIZATION OF INDUSTRY 67–69 (1968); Harold Demsetz, *Barriers to Entry*, 72 AM. ECON. REV. 47, 49–53 (1982); Harold Demsetz, *Industry Structure, Market Rivalry, and*

It is quite common for upstart rivals of established sellers to experience periods in which they must price below their costs in order to grow their market share to a point at which they achieve minimum efficient scale and thereby meet or exceed the experienced firms' efficiencies. Indeed, virtually every new business experiences some start-up or expansion phase in which its per-unit costs exceed its per-unit revenue. Businesses must, for example, build production facilities of the requisite size, produce marketing and advertising materials, give away free samples to generate consumer interest, and incur all sorts of other start-up costs. As the old saying goes, it takes money to make money. Yet, businesses that truly have a superior offering (in that their products are at least as good as their rivals' and can be produced as cheaply at minimum efficient scale) routinely manage to muscle through these periods of below-cost pricing and grow to a scale at which they achieve equivalent efficiencies. They do so by convincing investors and lenders that their product is superior to competing products and will eventually command enough consumer loyalty to warrant production at the level required to attain all available economies of scale. When they in fact have a "better mousetrap" and plausible plans for efficiently producing that offering, they should have little trouble raising start-up funds.³³⁹ Thus, any competitive rival—defined as an aggressive competitor that is as efficient as the bundled discounter or that would be so if it grew its output to minimum efficient scale—could not be excluded from the market by a bundled discount that resulted in above-cost pricing on each item in the bundle after the entire amount of the discount was attributed to that item.

Public Policy, 16 J.L. & ECON. 1, 4 (1973); Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 929–30 (1979). But see Richard R. Nelson, *Comments on a Paper by Posner*, 127 U. PA. L. REV. 949, 950 (1979) ("The Chicago proposition that scale economies don't serve as a barrier to entry hinges on explicit or implicit assumptions about perfect capital markets and no adjustment lags or costs.").

³³⁹ As I have elsewhere explained in defending a rule of per se legality for above-cost loyalty (single-product) discounts:

Just as a business must incur costs early on to establish the market share required to achieve minimum efficient scale, it might—if its margins were not great enough to fund a competitive discount—have to incur similar costs to recover market share from a discounting rival and thereby protect or enhance productive efficiencies. But the fact that it has to incur such costs does not mean it is being "excluded" from the market. If the disadvantaged rival's product was as good as the discounter's and could be produced as cheaply at minimum efficient scale, the rival should be able to raise enough capital to fund any discount necessary to grow its market share to the point necessary to achieve minimum efficient scale.

Lambert, *supra* note 4, at 1713–14. That argument applies with equal force in the bundled discounts context.

b. *Creating a Price Umbrella for Noncompetitive Rivals Does Not Further Competition or Enhance Dynamic Efficiency.*

Elhauge, however, is not content with a rule that protects only competitive rivals from discount-induced exclusion. He contends that even *noncompetitive* rivals of a bundled discounter—“[e]ven . . . the set of rivals who could never be equally efficient”—should be protected from exclusion via a bundled discount involving an unbundled linking product price that has been inflated above but-for levels.³⁴⁰ The exclusion of such rivals, he asserts, may harm consumer welfare.³⁴¹ By way of example, he poses a scenario in which a bundled discounter’s cost is \$100, its sole rival’s is \$150, and the monopoly price for the product at issue is \$200.³⁴² Observing that exclusion of the less-efficient rival would tend to increase price from \$150 to \$200, he asks, “Why should antitrust law tolerate inefficient conduct that harms consumers, merely because another harmed party is less efficient than the defendant?”³⁴³

As an initial matter, Elhauge is wrong to assume that every bundled discount that would be condemned under his liability rule amounts to “inefficient conduct that harms consumers.” As explained above, even bundled discounts involving an inflated unbundled price for the linking product may benefit consumers immediately by providing a lower total price for the products in the bundle.³⁴⁴ Thus, restricting such discounts in an attempt to prevent the exclusion of noncompetitive rivals would sacrifice static consumer welfare in order to protect laggard competitors—hardly an appropriate outcome for a body of law aimed at the protection of competition rather than competitors.³⁴⁵ And the outcome is far more perverse if one accounts for dynamic effects: An antitrust policy that denied consumers lower prices because the discounter’s

³⁴⁰ Elhauge, *supra* note 9, at 463.

³⁴¹ Elhauge’s point is similar to that which is asserted by several critics of the standard Judge Posner has proposed as a generalized test for unreasonably exclusionary conduct. Posner would condemn a monopolist’s conduct as unreasonably exclusionary only if it were capable of excluding an equally efficient rival. *See* POSNER, *supra* note 7, at 194–95 (defining exclusionary conduct as that which is “likely in the circumstances to exclude from the defendant’s market an equally or more efficient competitor”). Numerous scholars have complained that this test is underdeterrent in that it might exclude rivals who are not as efficient as the defendant but whose continued presence in the market could nonetheless benefit consumers. *See, e.g.,* HOVENKAMP, *supra* note 6, at 154; Marina Lao, *Defining Exclusionary Conduct Under Section 2: The Case for Non-Universal Standards*, in *INTERNATIONAL ANTITRUST LAW AND POLICY* 433 (Barry Hawk ed., 2006).

³⁴² Elhauge, *supra* note 9, at 463.

³⁴³ *Id.* at 463–64.

³⁴⁴ *See supra* notes 310–12 and accompanying text (explaining that as long as the aggregate but-for unbundled prices exceed the price of the bundle, consumers are benefited by the bundled discount, even if the unbundled linking price exceeds the but-for level).

³⁴⁵ *See* Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 488 (1977) (“The antitrust laws, however, were enacted for ‘the protection of *competition* not *competitors*.’” (quoting Brown Shoe Co. v. United States, 370 U.S. 294, 320 (1962))).

noncompetitive rivals might be excluded would weaken the incentive of nondominant rivals to work hard to match the efficiency of their dominant competitor and would thereby reduce dynamic efficiency and long-term consumer welfare.

In addition, concerns about error costs³⁴⁶ counsel rejection of a rule aimed at preserving noncompetitive rivals. Whereas the discount attribution test provides discounters with an easily administrable safe harbor (i.e., a bundled discount is per se legal if it could not exclude an equally efficient single-product rival), Elhauge's competitor-focused liability rule offers bundled discounters no guarantees. To ensure against antitrust liability and accompanying treble damages, a bundled discounter would have to be able to demonstrate *both* that its unbundled linking price had not been raised above but-for levels³⁴⁷ *and* that the discount did not occasion foreclosure of a substantial portion (more than 20% or so) of marketing opportunities in the linked product market.³⁴⁸ A bundled discounter could face difficulty with the former showing because unpredictable and easily swayed juries might become convinced that the discounter's linking product cost had dropped or its linking market power had eroded prior to initiation of the bundled discount, causing even a "level" unbundled linking product price (i.e., one equal to the pre-bundle linking price) to be artificially inflated.³⁴⁹ With respect to the latter showing, any bundled discounter would run a large risk, for it could not predict with certainty, at the time it initiated its bundled discount, how "successful" the pricing arrangement would be at winning business in the linked product market. Absent reliable protection from treble damages liability under the antitrust laws, potential bundled discounters would likely forego all sorts of pro-consumer discounting arrangements.³⁵⁰ By contrast, the discount attribution rule would protect all

³⁴⁶ Error costs are the sum of social losses resulting from the false positives and false negatives generated by a liability rule. *See generally* Lambert, *supra* note 93, at 874–79 (defining error costs in antitrust context).

³⁴⁷ Otherwise, the discount would be treated as a de facto tie-in and, because the discounter could not artificially raise the unbundled linking product price absent market power in the linking product market, would likely be condemned under the quasi-per se rule. *See supra* note 83 and accompanying text.

³⁴⁸ Otherwise, the bundled discount could be deemed illegal under Elhauge's proposed rule-of-reason analysis. *See* Elhauge, *supra* note 9, at 469 (asserting that bundled discounts occasioning linked market foreclosure of 20%–30% should be deemed illegal under a rule-of-reason analysis).

³⁴⁹ *See* Elhauge, *supra* note 9, at 468 (explaining that even a linking price that does not exceed pre-program levels may have been artificially inflated).

³⁵⁰ Elhauge himself has recognized that vague liability standards applied by non-expert jurors with the power to impose treble damages will tend to chill proconsumer, but untested, business arrangements. *See* Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253, 266 (2003) (observing that overdeterrence is likely when "firms must operate under the risk that the actual criteria by which their conduct will be judged will depend largely on the happenstance of which judge and jurors will be selected in a trial a great number of years later that will retroactively decide whether to assess multimillion or even multibillion dollar treble damages").

competitive single-product rivals from exclusion while creating a clear and easily administrable safe harbor for bundled discounts that could not exclude such rivals. The sum of social losses from over- and under-deterrence of bundled discounting arrangements is therefore likely to be lower under the discount attribution rule.

C. Appropriate Minimal Requirements for Liability Based on Bundled Discounting

Because the initial inquiry Elhauge prescribes (i.e., Does the unbundled linking price exceed its but-for level?) is not dispositive of a bundled discount's effect on consumer welfare,³⁵¹ is exceedingly difficult to answer (thus creating uncertainty that would likely chill desirable discounting),³⁵² and is irrelevant to whether a bundled discount creates truly anticompetitive harms,³⁵³ courts should eschew it altogether and instead focus from the outset on the degree to which a challenged discount generates linked market foreclosure. But substantial linked market foreclosure, by itself, should not be enough to create antitrust liability. Before condemning a foreclosure-causing discount, an evaluating court should ensure that the foreclosure occasioned by the discount is *anticompetitive*—i.e., that it is not simply the result of price-cutting that an aggressive, competitive rival could match. To make that determination, a court should ask whether the challenged bundled discount results in above-cost pricing of the competitive product(s) under the discount attribution test; if so, the discount could be matched by a determined, competitive rival, can cause no anticompetitive harm, and should be insulated from liability. Thus, both substantial linked market foreclosure and below-cost pricing under the discount attribution test should be minimal prerequisites to antitrust liability based on bundled discounting.³⁵⁴

I do not address here whether substantial linked market foreclosure and below-cost pricing under the discount attribution test should be *sufficient*, as opposed to merely necessary, conditions to bundled discounting liability. I have elsewhere answered that question in the negative, advocating a liability rule that

³⁵¹ As explained above, a bundled discount involving an unbundled linking price that exceeds the but-for level may still provide immediate consumer benefit in the form of lower prices. See *supra* notes 310–12 and accompanying text.

³⁵² See *supra* Part IV.B.2.

³⁵³ See *supra* Part IV.B.2.

³⁵⁴ In terms of proof burdens, the plaintiff should have the burden of proving that the discount at issue has caused or is likely to cause substantial foreclosure (i.e., > 20%–30%) of the linked market. Upon such a showing, the burden should probably shift to the defendant to prove that its discount is above-cost under the discount attribution test. While below-cost pricing is a prerequisite to anticompetitive harm and would thus seem to be part of the plaintiff's *prima facie* case, the defendant is in a much better position to present evidence on the prices and costs of its own products, and it thus makes most sense to treat above-cost pricing (under the discount attribution test) as an affirmative defense.

would require a plaintiff challenging a bundled discount to make several additional showings to establish its inability to avoid exclusion via vigorous competition.³⁵⁵ While I stand by my initial proposal, my point here has been merely to rebut Elhauge's seductive claim that no form of below-cost pricing should be a prerequisite to antitrust liability based on bundled discounting. For the reasons set forth above, both substantial linked market foreclosure and below-cost pricing under the discount attribution test are, in fact, necessary for bundled discounting to occasion truly anticompetitive harm, and both should be required for an instance of bundled discounting to give rise to antitrust liability.

V. CONCLUSION

Professor Einer Elhauge has made numerous valuable contributions to antitrust scholarship. The provocative article discussed herein is no exception. Masterfully synthesizing a great deal of learning on the potential price discrimination and foreclosure effects of tying and bundled discounting, Elhauge's article promises to rein in overly broad claims about tying's futility (occasioned by a failure to appreciate the restrictive assumptions underlying the single monopoly profit theory) and about bundled discounting's resemblance to predatory pricing (occasioned by a failure to recognize how bundled discounts may resemble tie-ins). For that, Elhauge should be heartily congratulated.

But Elhauge's ultimate conclusions are flawed. Supreme Court precedent does not hold that tying's price-discrimination effects are anticompetitive and a proper concern for antitrust. Tying-induced price discrimination does not usually reduce total or consumer welfare. In fact, when dynamic effects are considered, tying-induced price discrimination likely enhances both total and consumer welfare by spurring vigorous competition. Accordingly, tying may cause anticompetitive effects only when it involves substantial tied market foreclosure, and such foreclosure should therefore be a prerequisite to tying liability.

Elhauge's mistakes about tying throw him off track when it comes to bundled discounts. His mistaken conclusion that tying's nonforeclosure, price-discrimination effects are anticompetitive leads him to propose an impossible-to-administer test to identify bundled discounts that have tying characteristics but do not occasion substantial linked market foreclosure. That test, which is not properly calibrated to identify bundled discounts that create no immediate consumer benefit and is so inadministrable that it would likely chill consumer-friendly bundled discounts, would be unnecessary if courts properly deemed substantial linked market foreclosure to be a prerequisite to bundled discounting liability. They should do so. Moreover, they should ensure that the foreclosure

³⁵⁵ See Lambert, *supra* note 4, at 1739–53 (proposing a liability rule that would require a plaintiff complaining of a bundled discount to establish (1) the existence of entry barriers to the linking and linked markets, (2) the impracticability of coordinating a competing bundle, and (3) that it unsuccessfully sought to avoid exclusion by becoming a supplier to the bundled discounter).

at issue is *anticompetitive* foreclosure—foreclosure that could not be avoided by a determined, competitive rival. To make that determination, they should consider whether the bundled discount results in a below-cost price for the competitive product after the entire amount of the discount is attributed to that product; if not, it could be matched by any determined rival that is as efficient as the discounter or would be so upon reaching minimum efficient scale. Thus, a form of below-cost pricing should be a prerequisite to antitrust liability based on bundled discounting.

The Roberts Court has shown a significant interest in antitrust matters,³⁵⁶ and scholars have predicted that it may soon consider whether to abrogate the quasi-per se rule against tying and replace it with the sort of foreclosure-focused rule of reason applicable to exclusive dealing.³⁵⁷ The Court may also be called upon to resolve the current circuit split over the existence of a discount attribution safe harbor for bundled discounting.³⁵⁸ In either event, the Court will no doubt encounter Professor Elhauge's seductive ideas about the appropriate prerequisites to liability for tying and bundled discounting. For the reasons stated herein, it should reject them.

³⁵⁶ See Einer Elhauge, *Harvard, Not Chicago: Which Antitrust School Drives Recent Supreme Court Decisions?*, COMPETITION POL'Y INT'L, Autumn 2007, at 59, 60 ("After a long antitrust slumber, the Supreme Court has become active again in antitrust law, deciding seven cases in the last two years."); Joshua D. Wright, *The Roberts Court and the Chicago School of Antitrust: The 2006 Term and Beyond*, COMPETITION POL'Y INT'L, Autumn 2007, at 24, 25 ("The antitrust activity level of the Roberts Court thus far has exceeded the single case average of the Court prior to the 2003–2004 Term by a significant margin.").

³⁵⁷ See, e.g., Wright, *supra* note 356, at 56 ("[T]he Roberts Court will overturn *Jefferson Parish*'s modified per se rule in favor of the rule of reason, thus eliminating the last vestiges of the hostile approach to vertical contracting practices of antitrust eras past.").

³⁵⁸ Compare *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 906 (9th Cir. 2008) (endorsing discount attribution safe harbor), with *LePage's Inc. v. 3M*, 324 F.3d 141, 152 (3d Cir. 2003) (en banc) (eschewing price-cost comparison in evaluating legality of bundled discounts).

